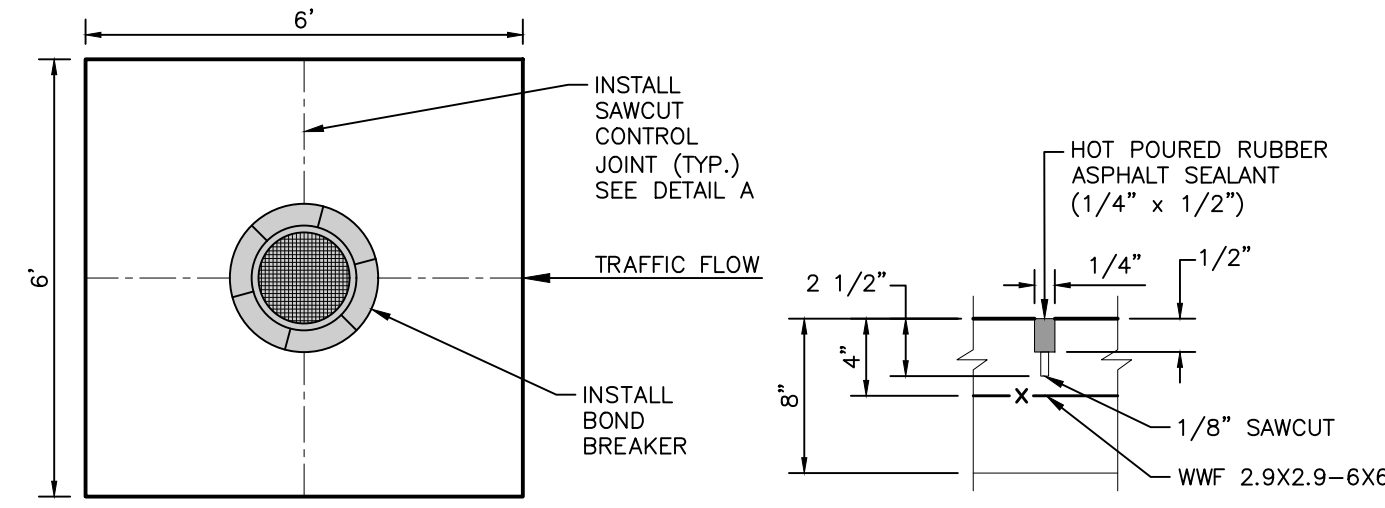
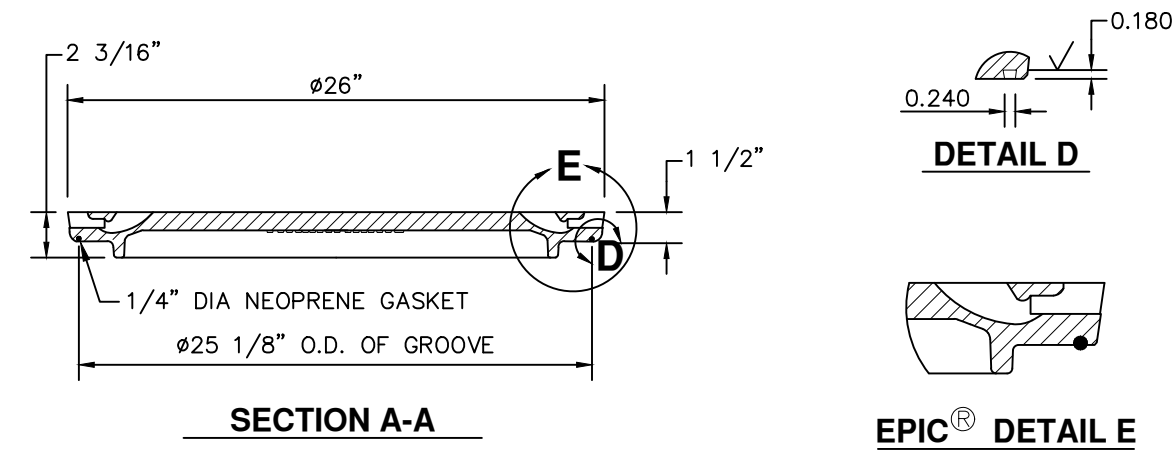


TOP VIEW OF COVER
BOTTOM VIEW OF COVER



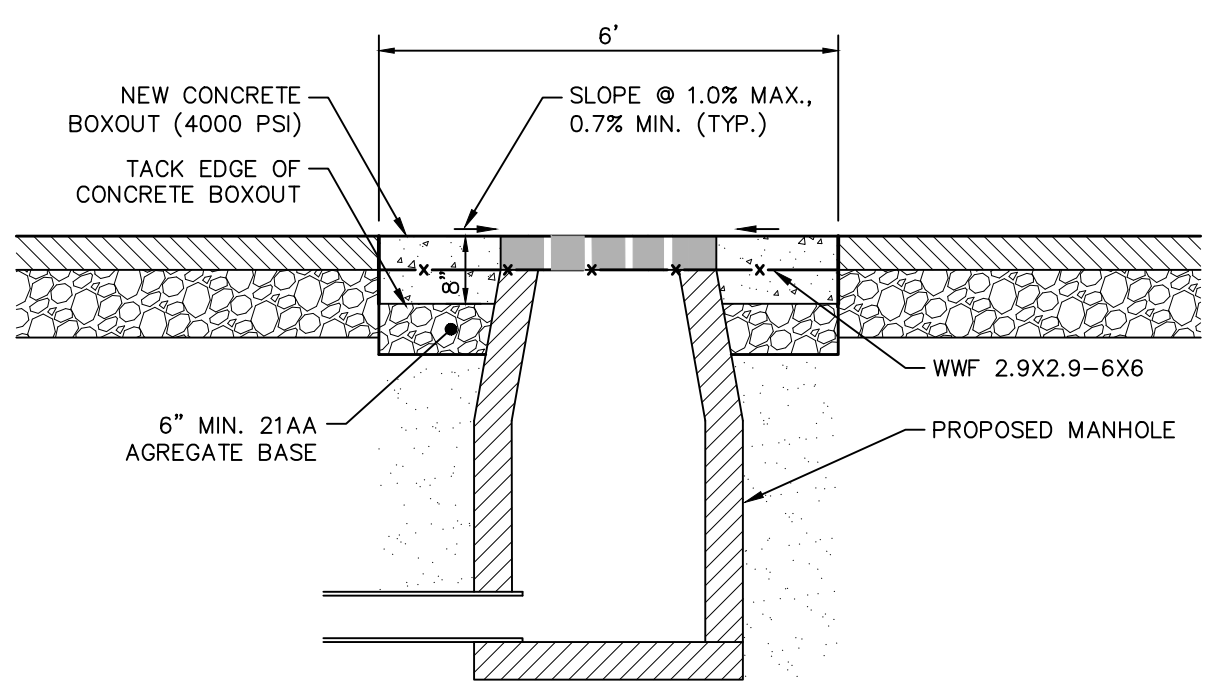
PLAN VIEW
CONTROL JOINT



SECTION A-A
EPIC® DETAIL E

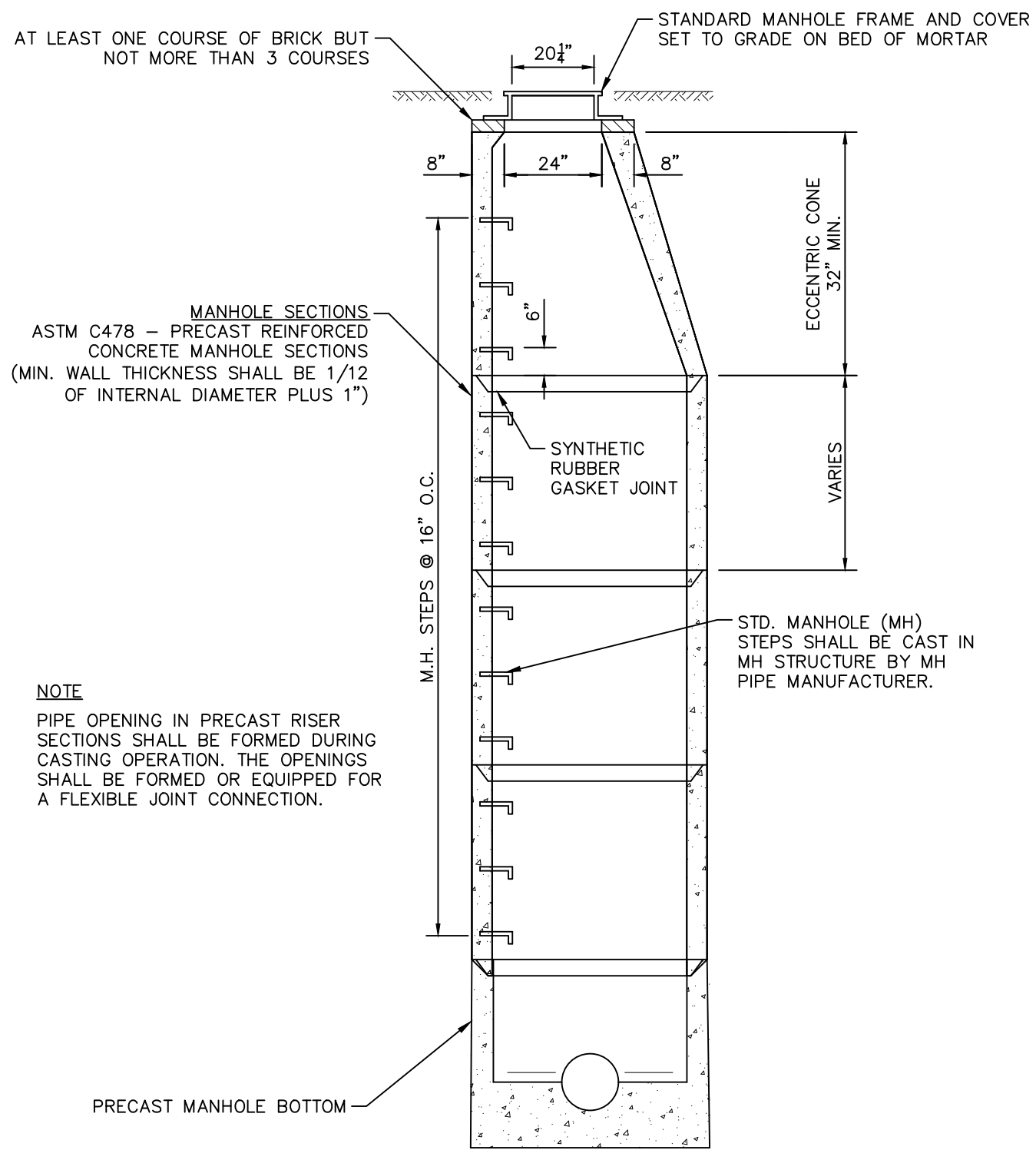
NOTES:
CATALOG NO. 1040AGS
EST. WEIGHT COVER: 150 LBS.
MATL SPEC.: COVER - GRAY IRON ASTM A48 CL35B
LOAD RATING: HEAVY DUTY
COATING: DIPPED

MANHOLE FRAME AND COVER
NOT TO SCALE



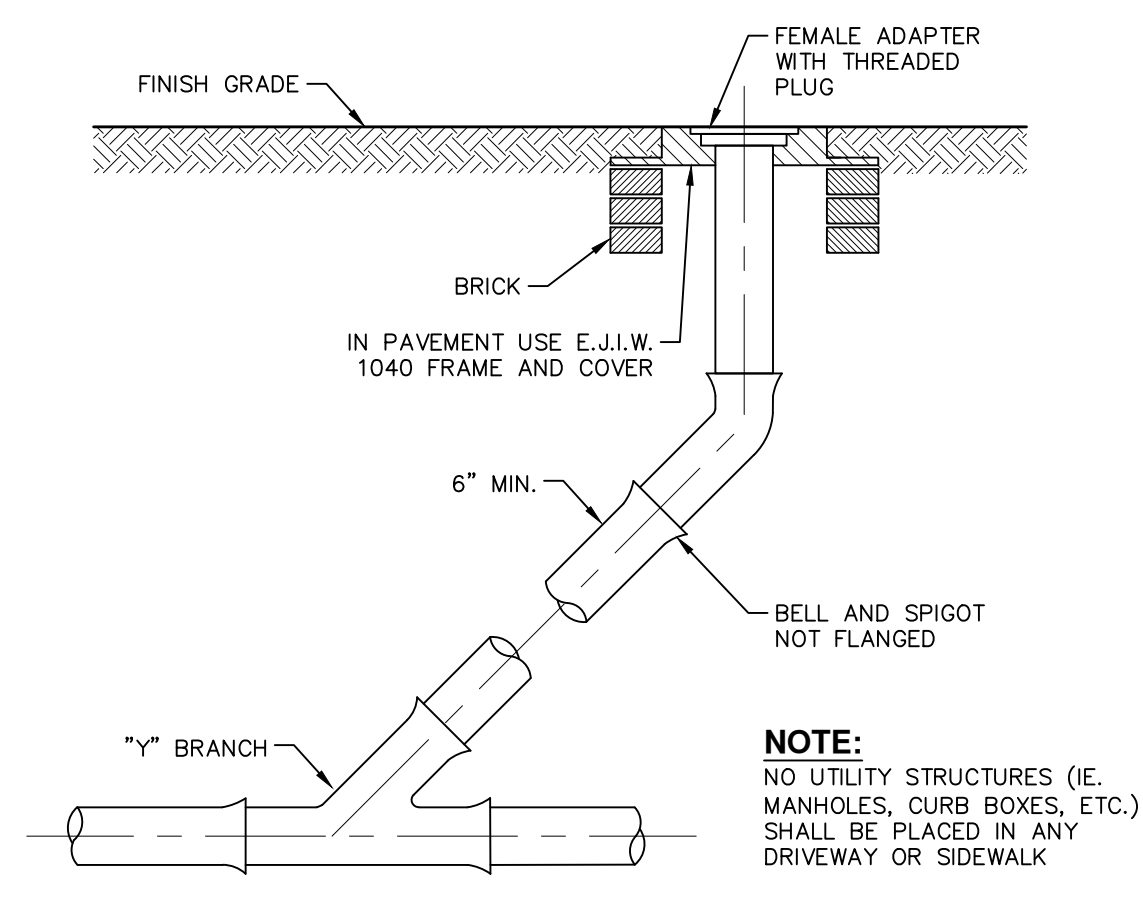
CROSS SECTION

CONCRETE BOXOUT PLAN - SECTION
NOT TO SCALE

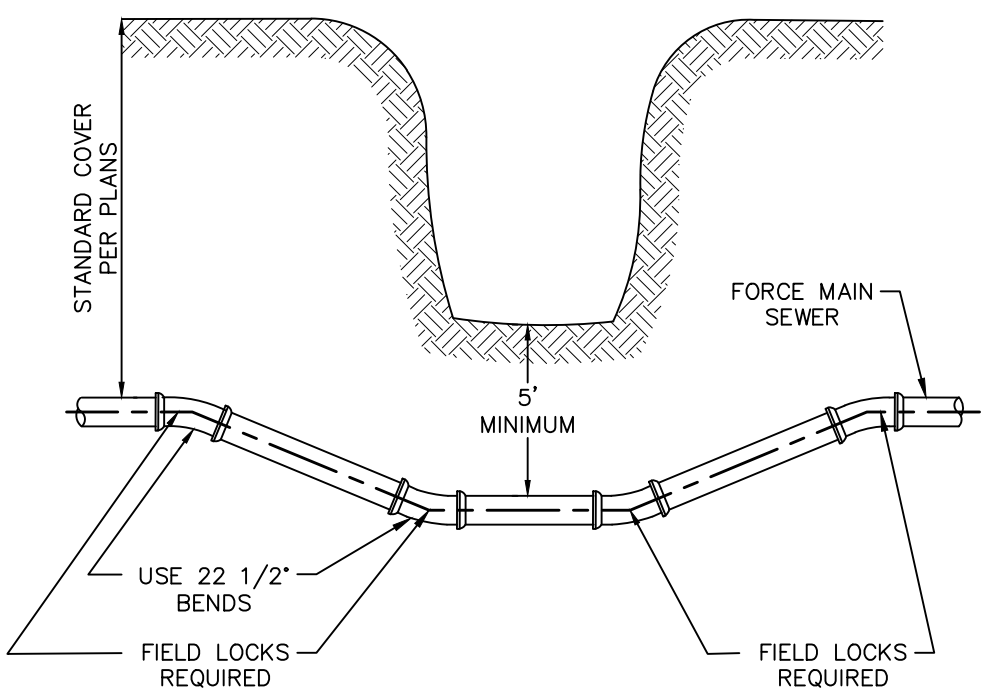


NOTE:
PIPE OPENING IN PRECAST RISER SECTIONS SHALL BE FORMED DURING CASTING OPERATION. THE OPENINGS SHALL BE FORMED OR EQUIPPED FOR A FLEXIBLE JOINT CONNECTION.

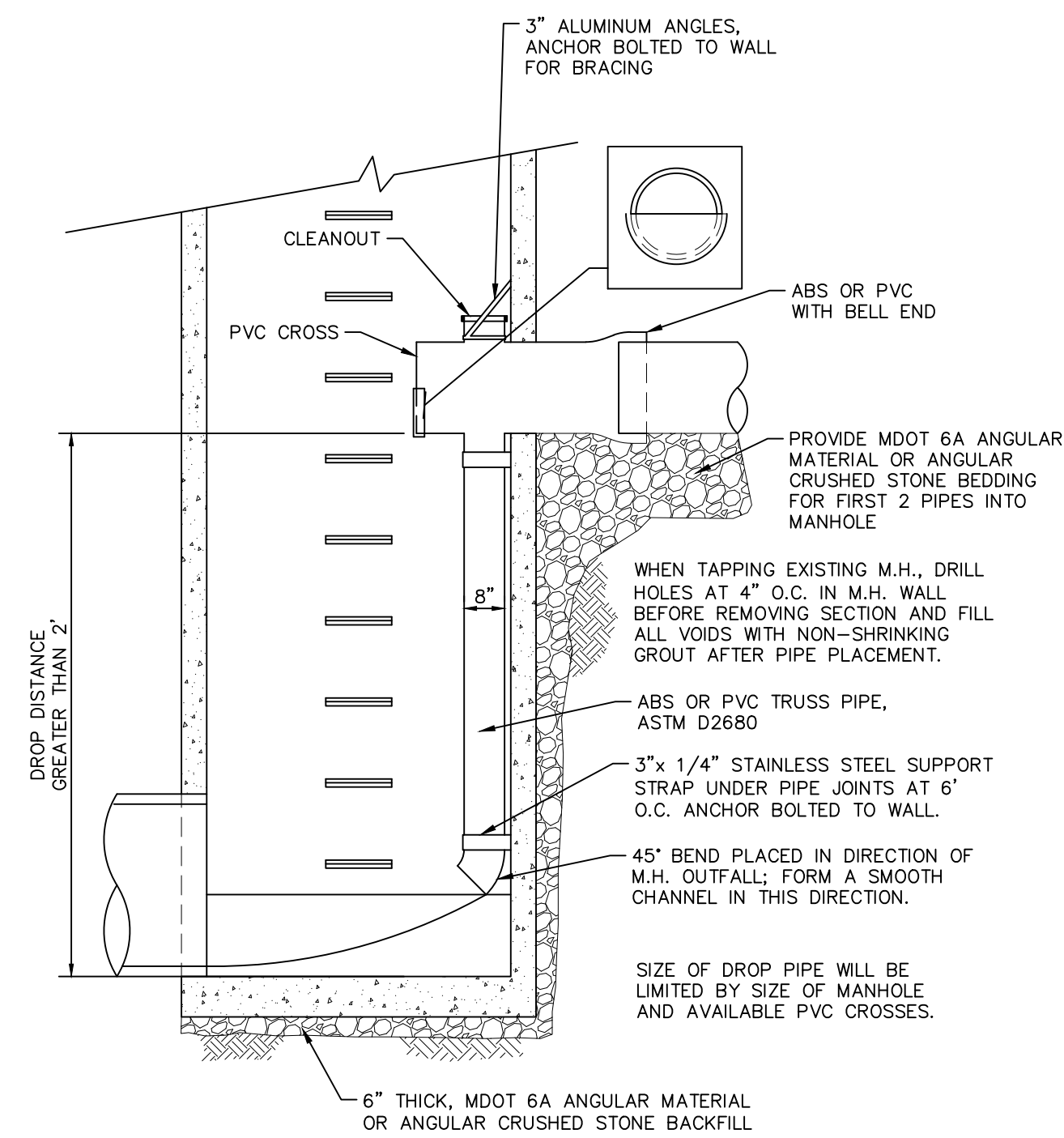
MANHOLE, PRECAST
NOT TO SCALE



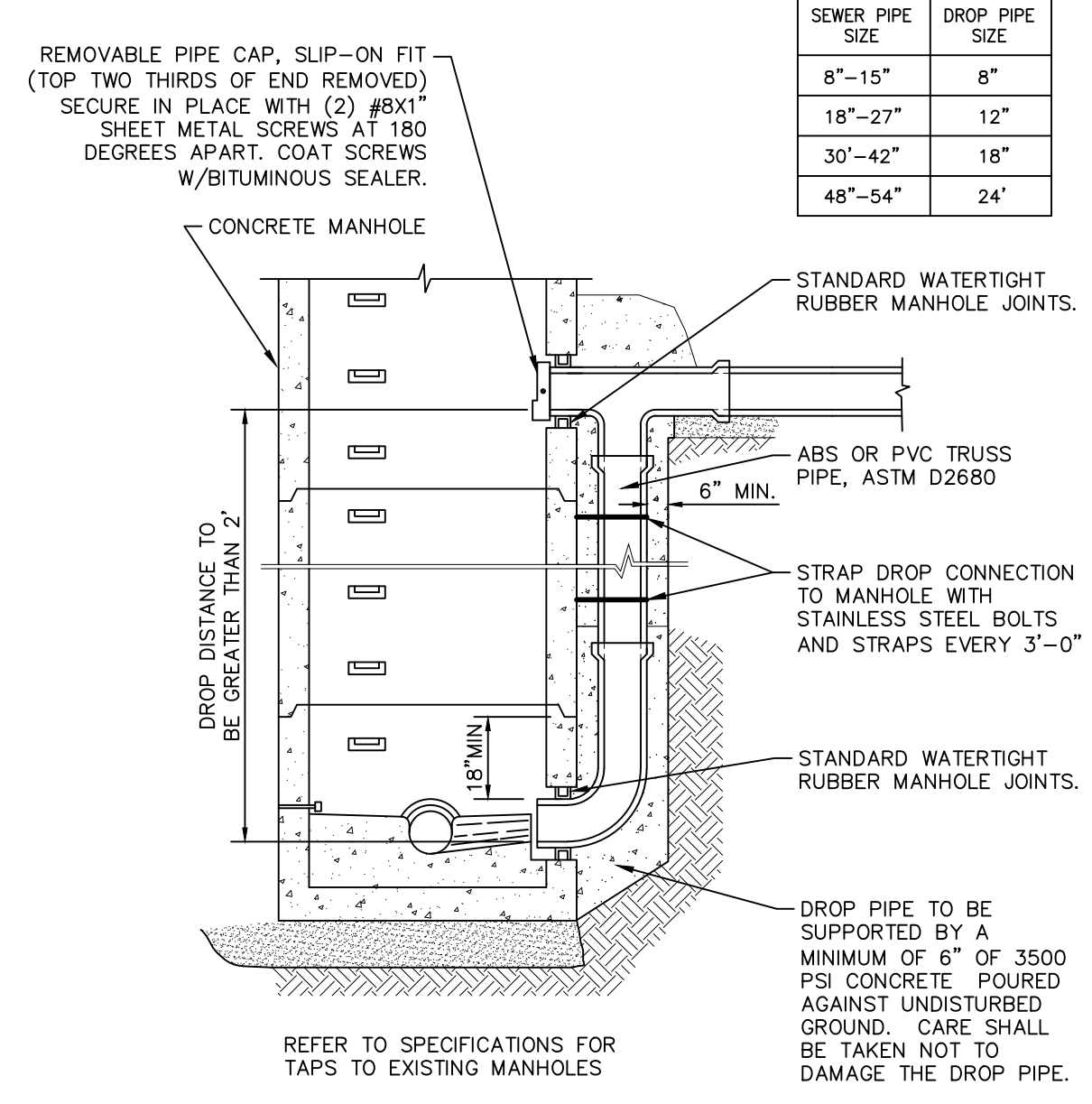
SANITARY SEWER CLEANOUT
NOT TO SCALE



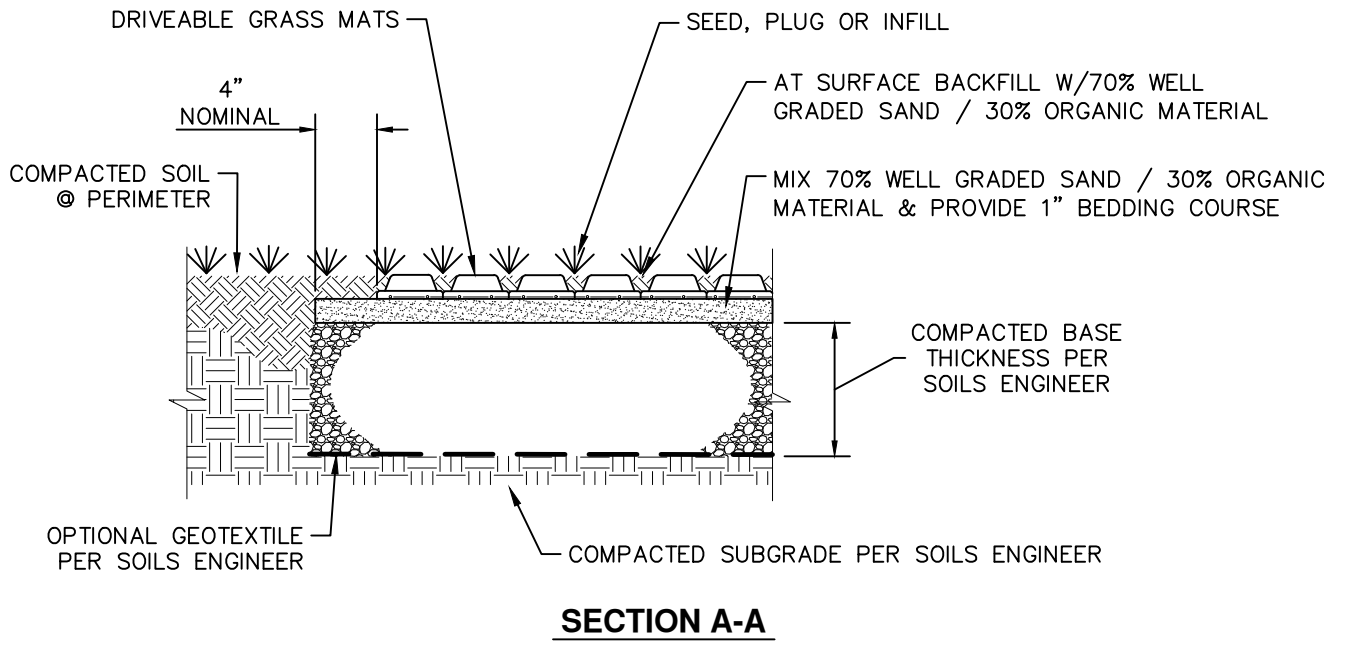
DITCH AND STREAM CROSSING
NOT TO SCALE



MANHOLE, INTERIOR DROP
NOT TO SCALE

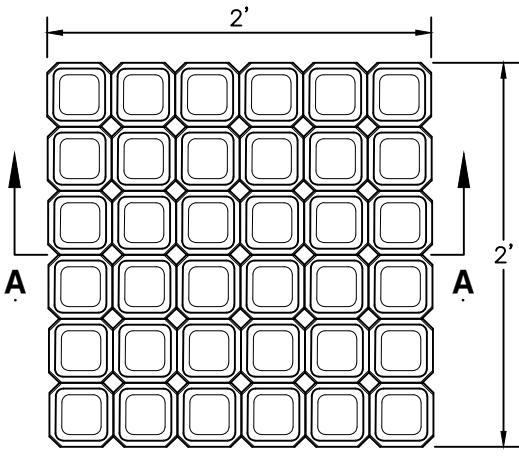


MANHOLE, EXTERIOR DROP
NOT TO SCALE



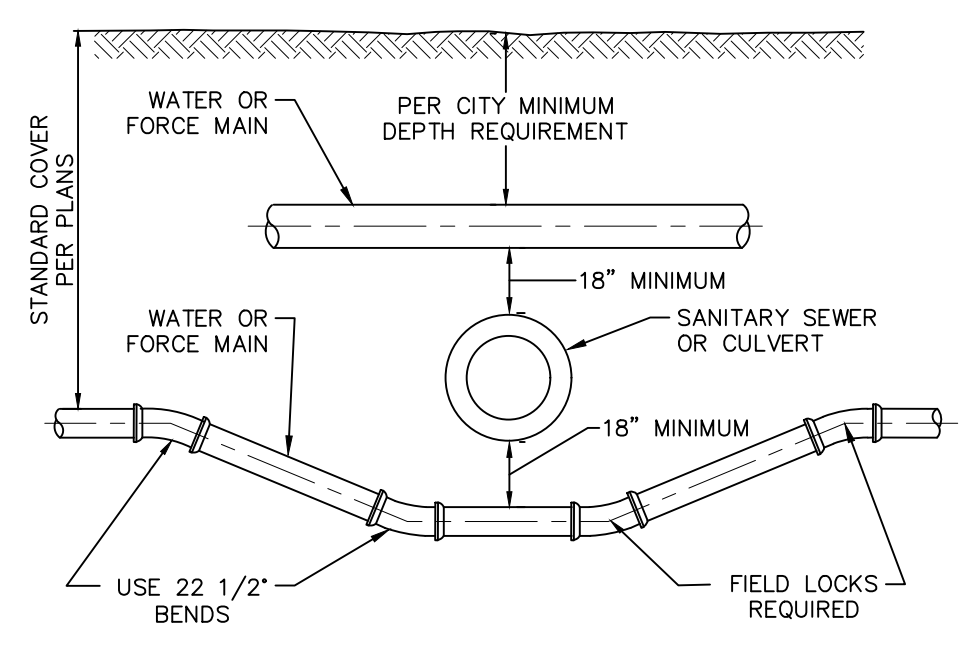
SECTION A-A

NOTE:
FOR STORMWATER MANAGEMENT APPLICATIONS INCLUDING STORAGE AND INFILTRATION, ALTERNATE INFILLS, BASE MATERIAL, AND DRAINAGE MAY BE REQUIRED

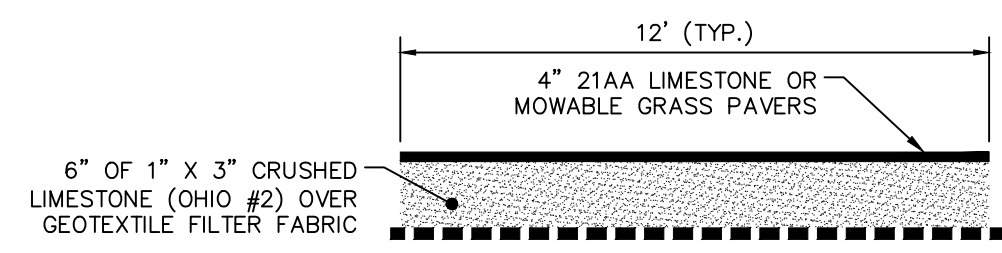


PLAN VIEW

TYPICAL HEAVY TRAFFIC DRIVABLE GRASS DETAIL
NOT TO SCALE



SEWER OR CULVERT CROSSING
NOT TO SCALE



SANITARY SEWER ACCESS PATH
NOT TO SCALE

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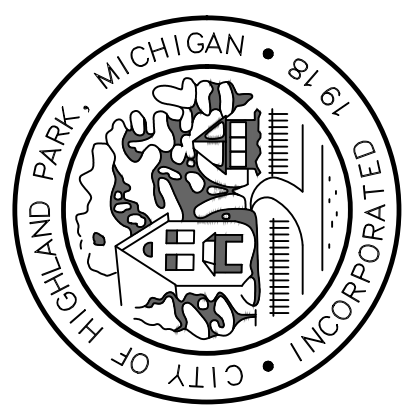
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.



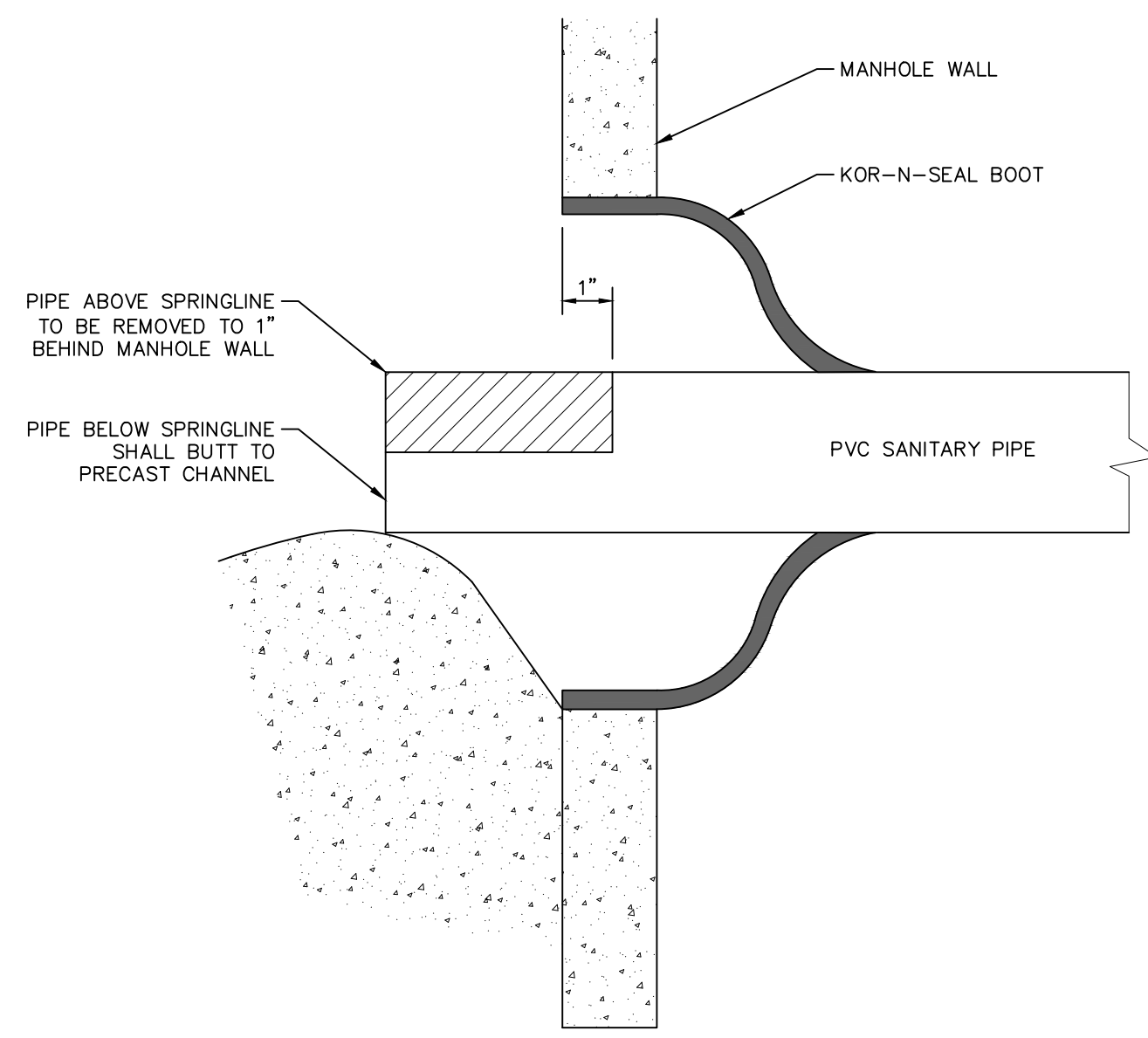
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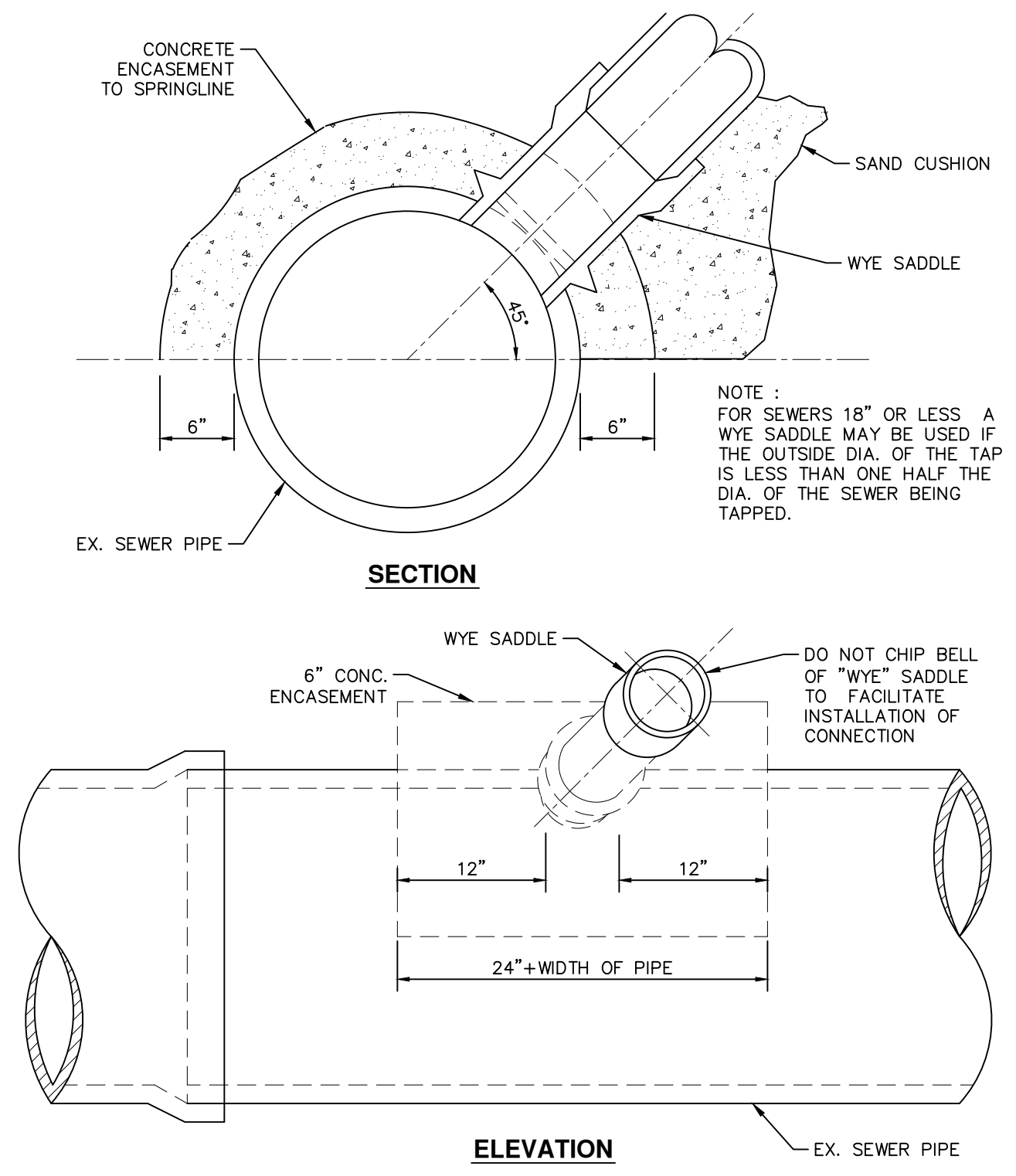
CITY OF HIGHLAND PARK
STANDARD SANITARY SEWER DETAILS AND NOTES
SANITARY SEWER - 1



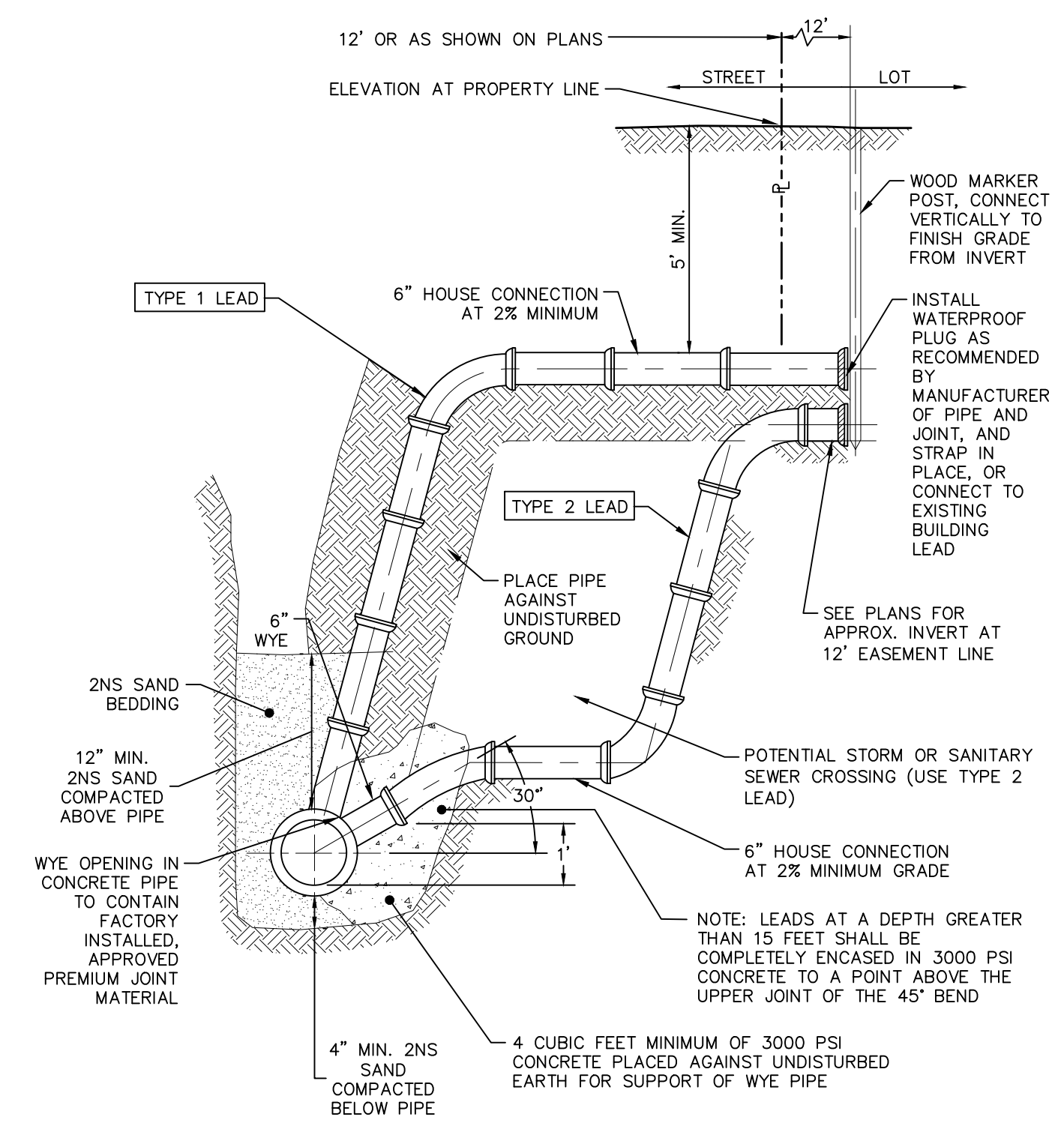
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DATE:	06.19.2023
SCALE:	AS SHOWN PER DETAIL
DRAWN BY:	Metro Consulting Associates
COUNTY:	WAYNE
SHEET:	SAN1



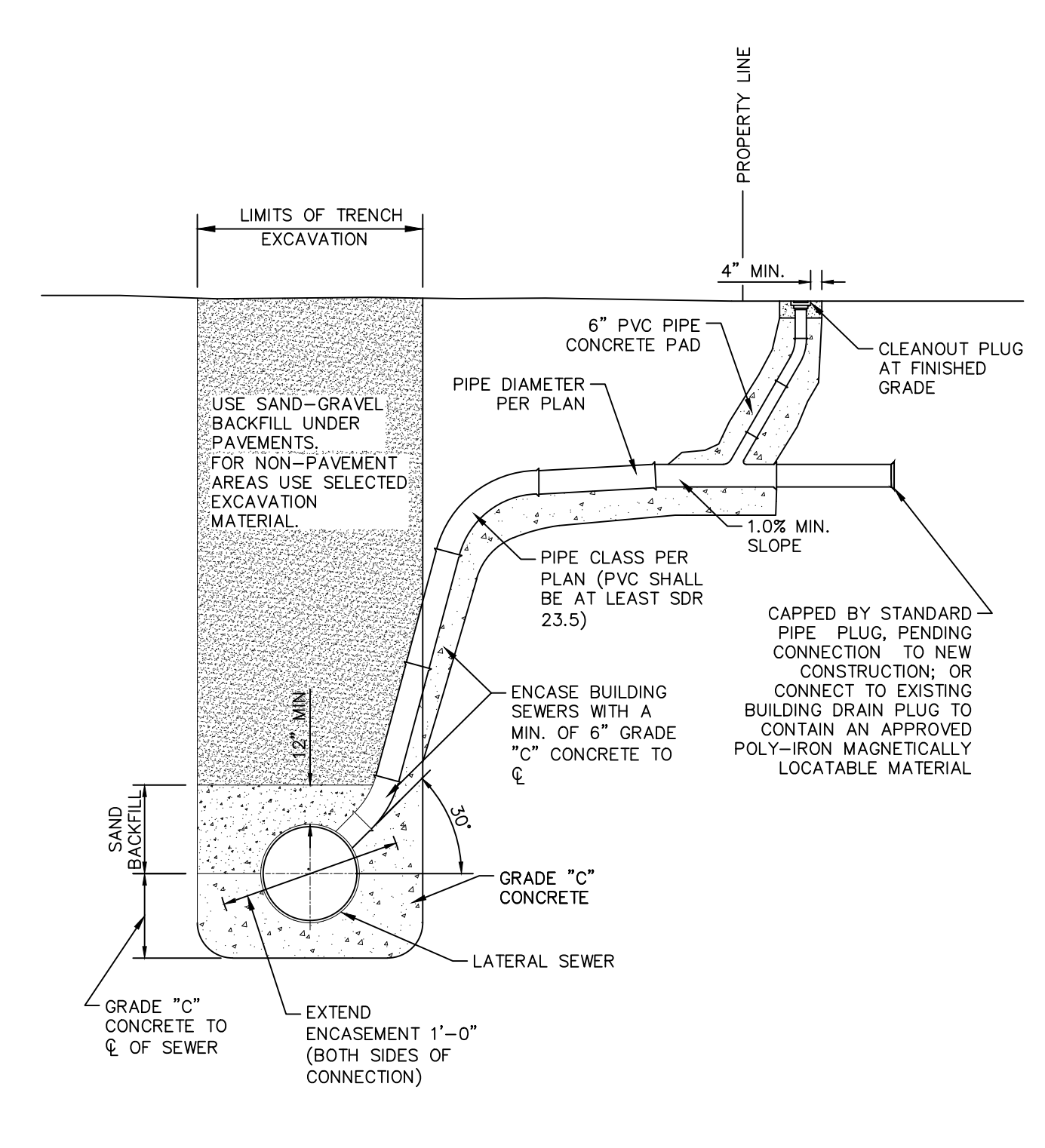
SANITARY PIPE PENETRATION
NOT TO SCALE



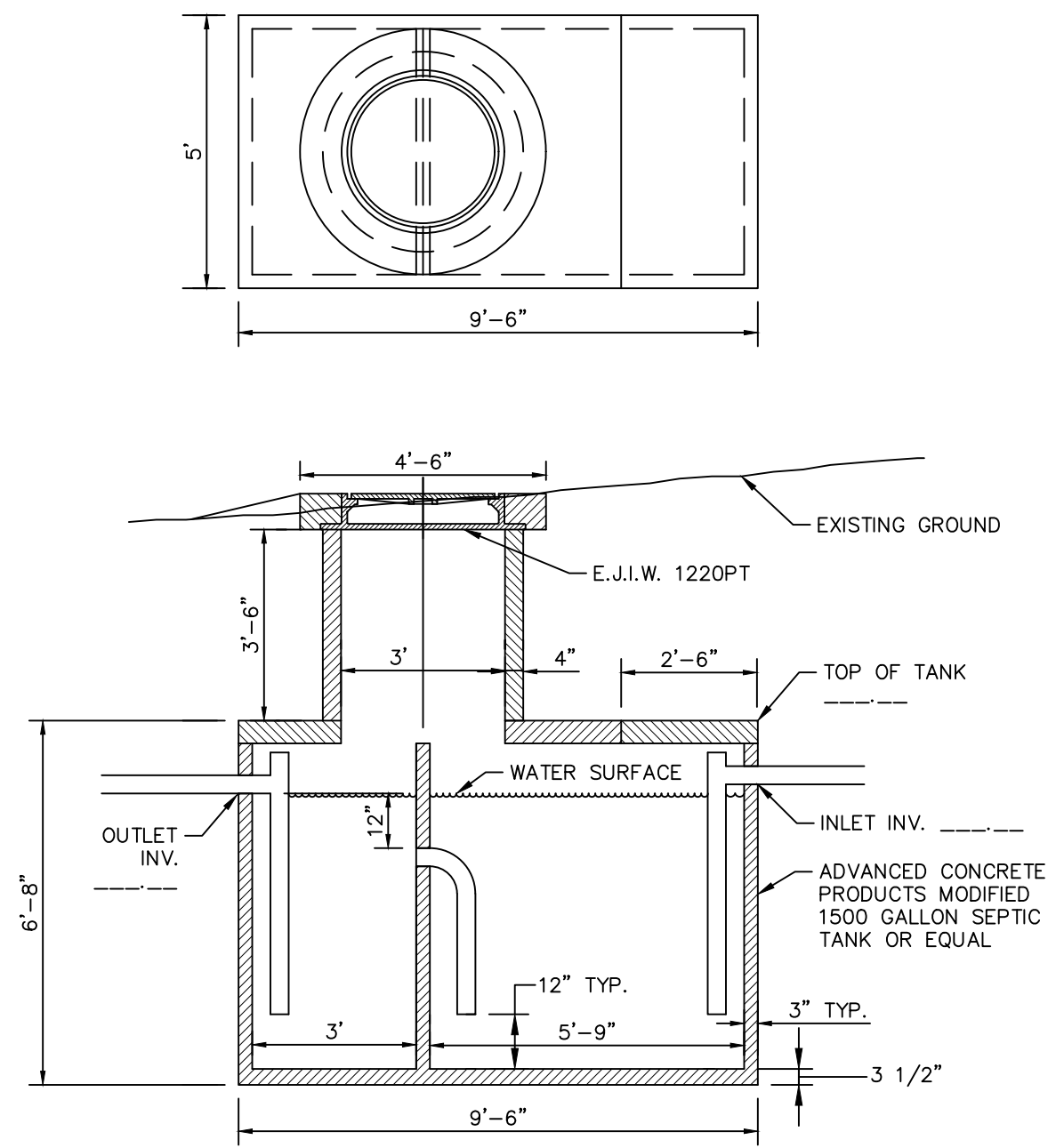
CONNECTION SADDLE TO LATERAL SEWER
NOT TO SCALE



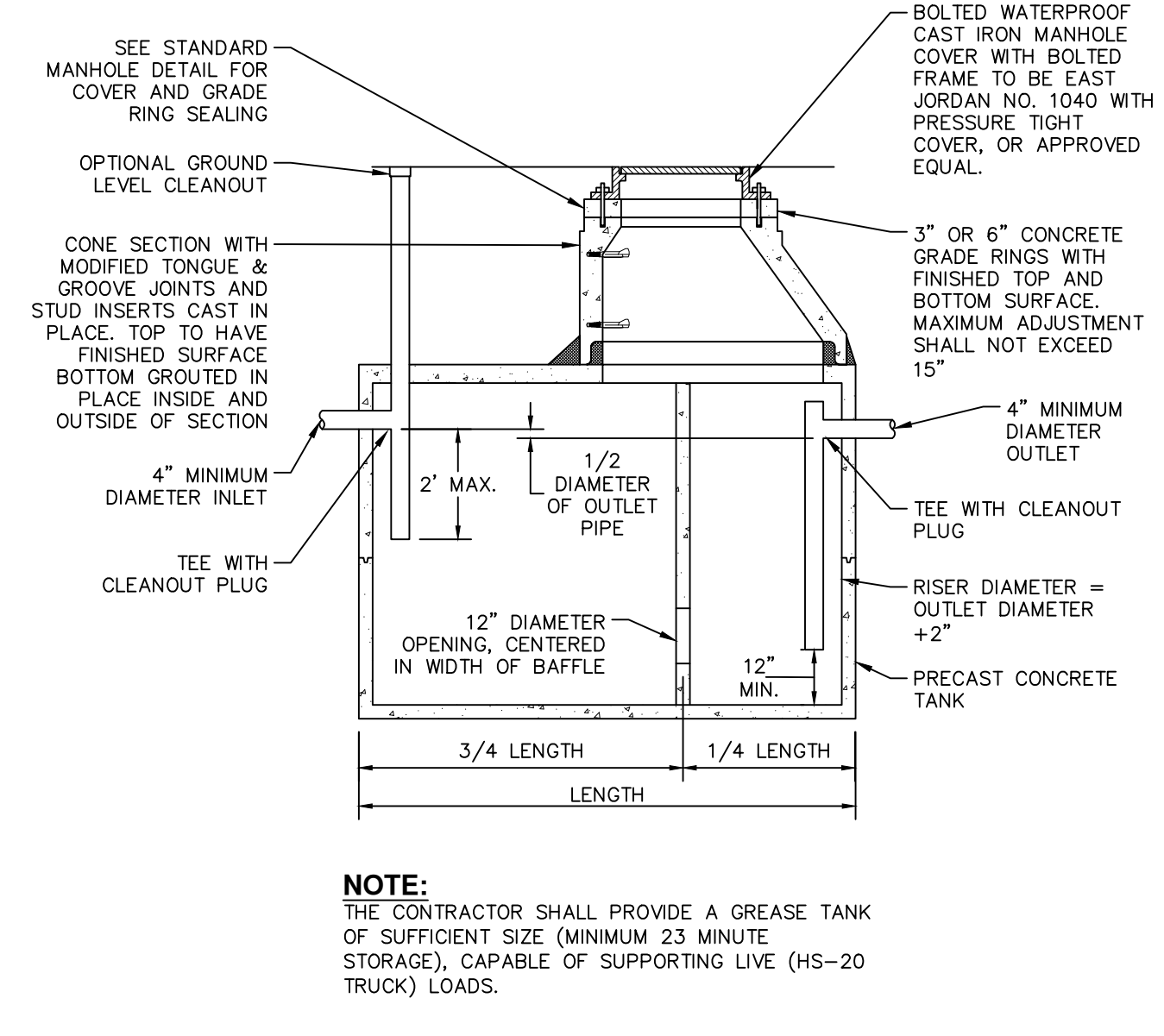
SANITARY SEWER SERVICE & RISER CONNECTION DETAIL
NOT TO SCALE



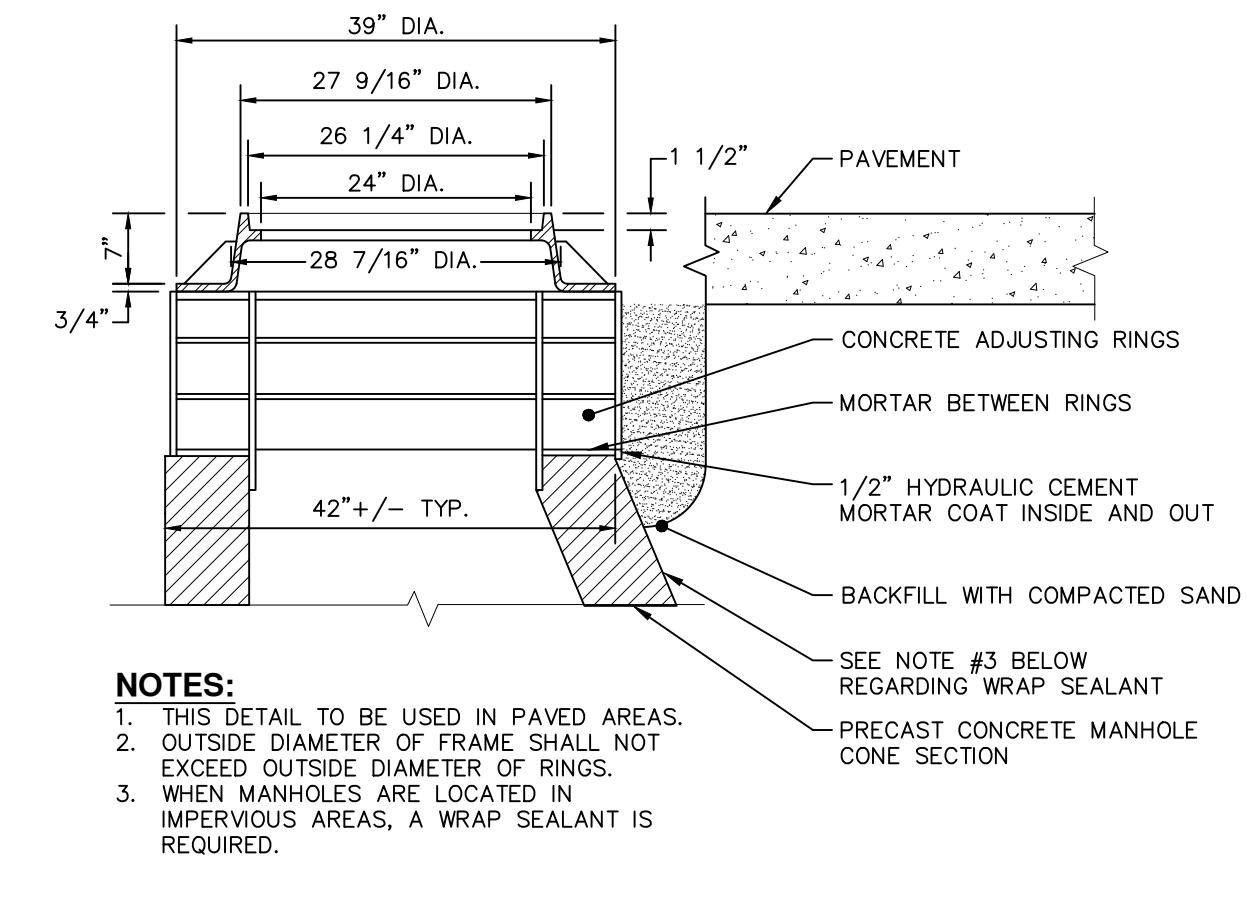
WYE CONNECTION AND EXTENSION
NOT TO SCALE



GREASE TRAP
NOT TO SCALE

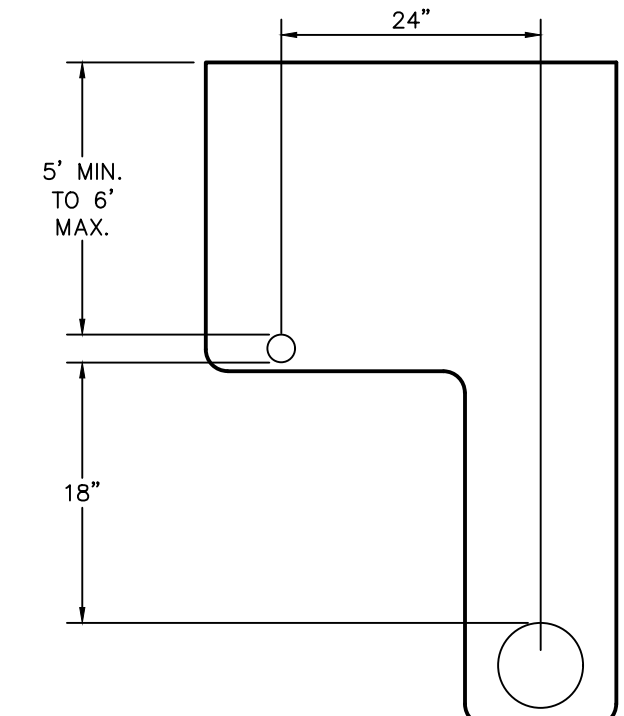


DOUBLE-COMPARTMENT GREASE INTERCEPTOR TANK
NOT TO SCALE



NOTES:
1. THIS DETAIL TO BE USED IN PAVED AREAS.
2. OUTSIDE DIAMETER OF FRAME SHALL NOT EXCEED OUTSIDE DIAMETER OF RINGS.
3. WHEN MANHOLES ARE LOCATED IN IMPERVIOUS AREAS, A WRAP SEALANT IS REQUIRED.

EXTERNAL FRAME SEAL
NOT TO SCALE



TYPICAL L TRENCH DETAIL HOUSE LEADS
NOT TO SCALE

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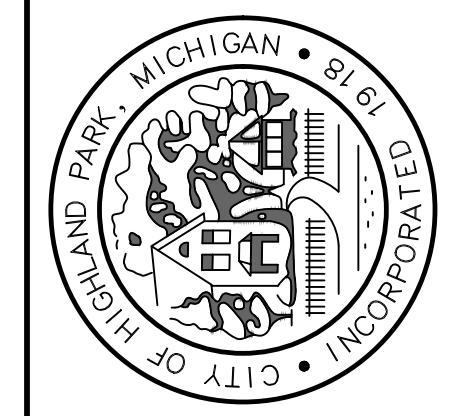


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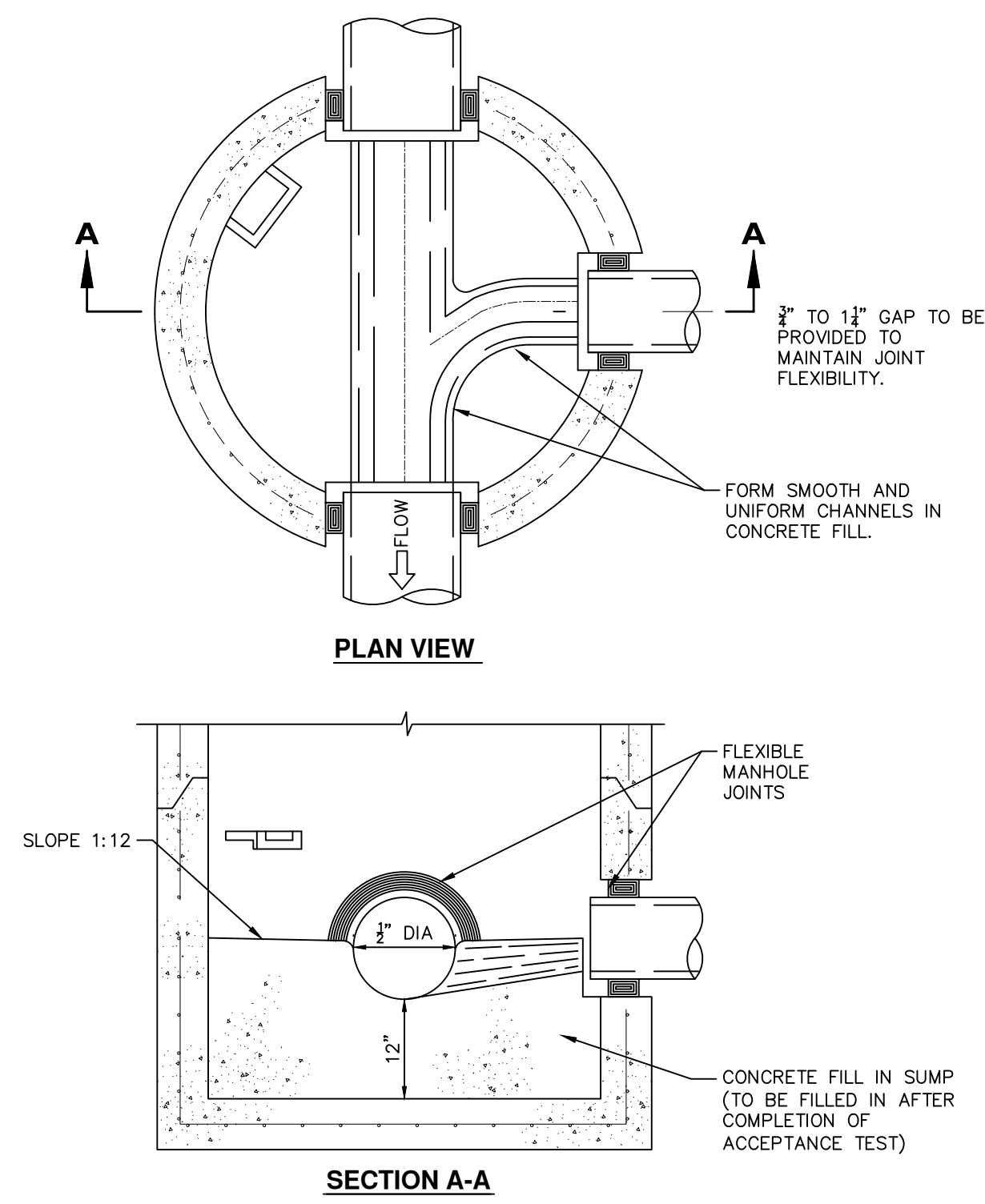
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NO.	DESCRIPTION

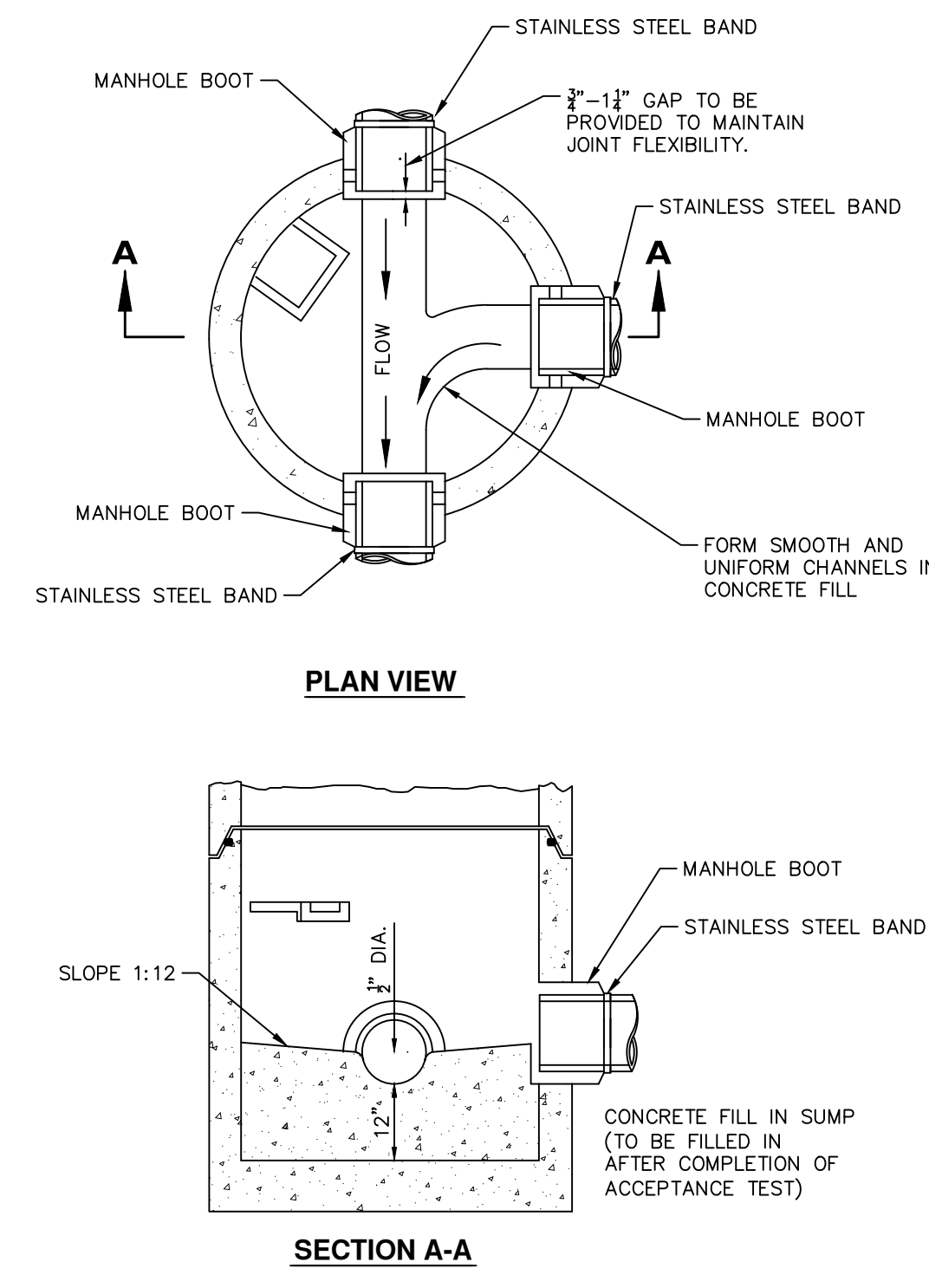
CITY OF HIGHLAND PARK
STANDARD SANITARY SEWER DETAILS AND NOTES
SANITARY SEWER-2



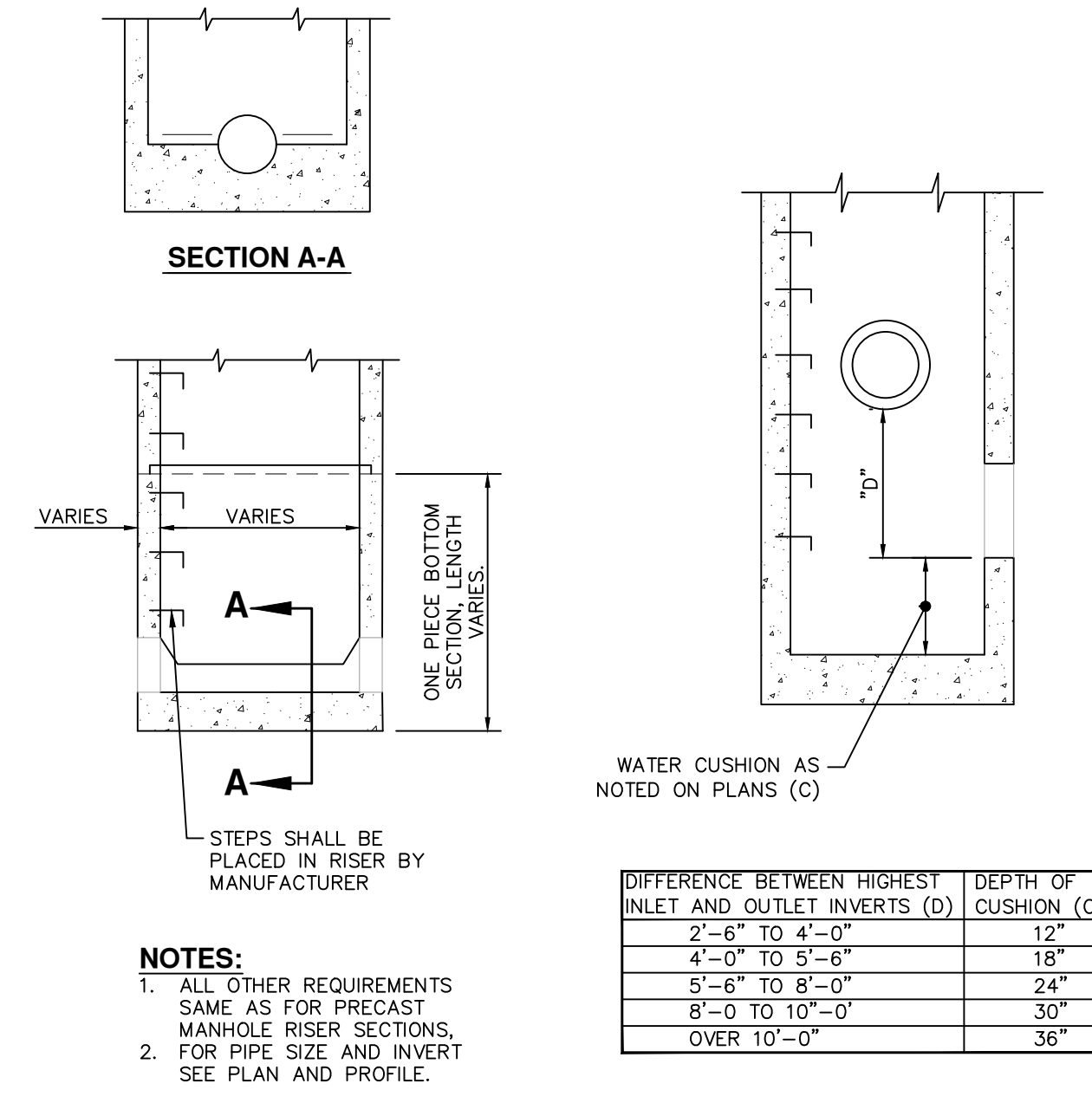
MCA JOB #:	1039-18-8756
DATE:	06.19.2023
SCALE:	AS SHOWN PER DETAIL
DRAWN BY:	Metro Consulting Associates
COUNTY:	WAYNE
SHEET:	SAN2



MANHOLE, SUMP WITH FLEXIBLE JOINT
NOT TO SCALE



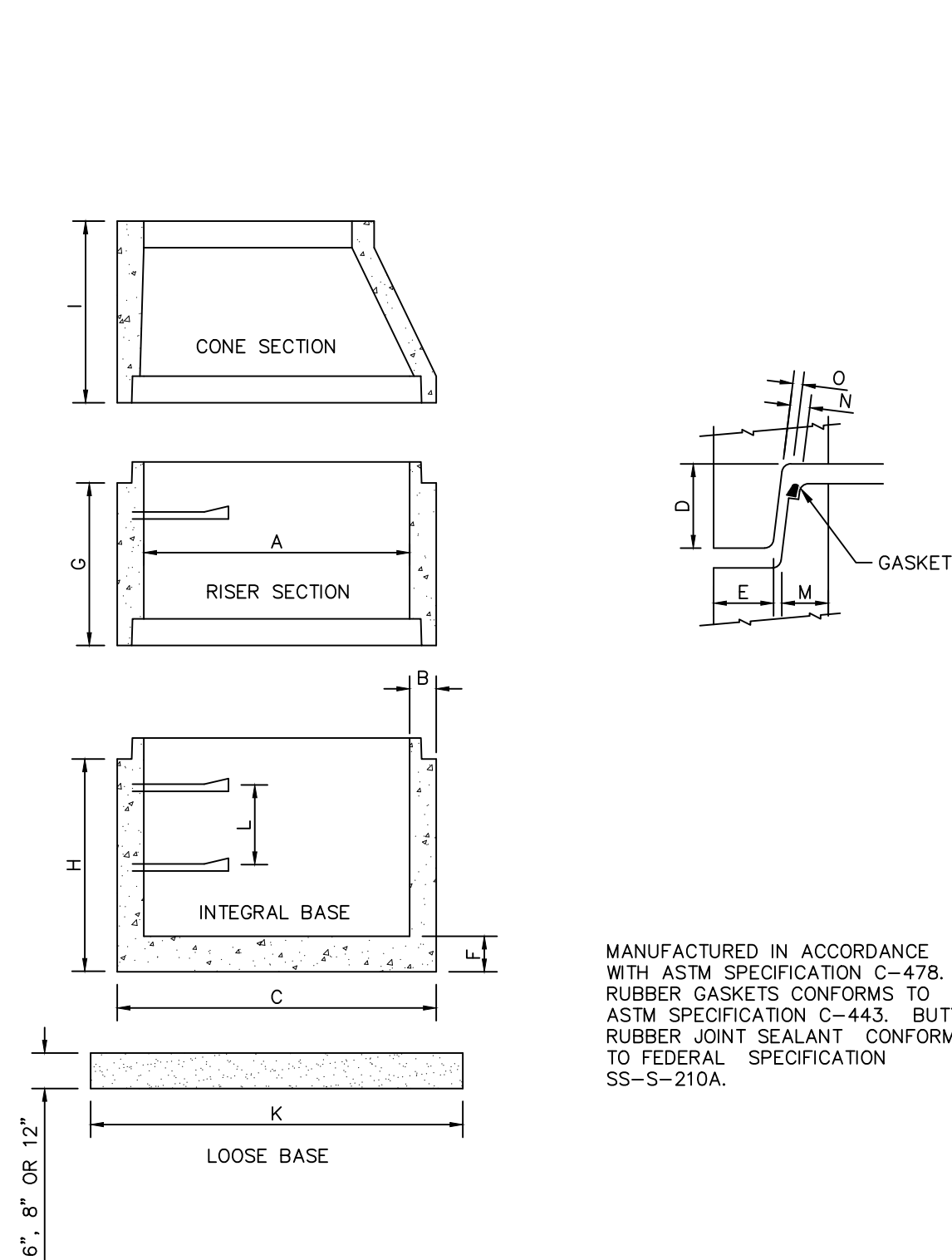
MANHOLE, SUMP WITH BOOT & STAINLESS STEEL BAND
NOT TO SCALE



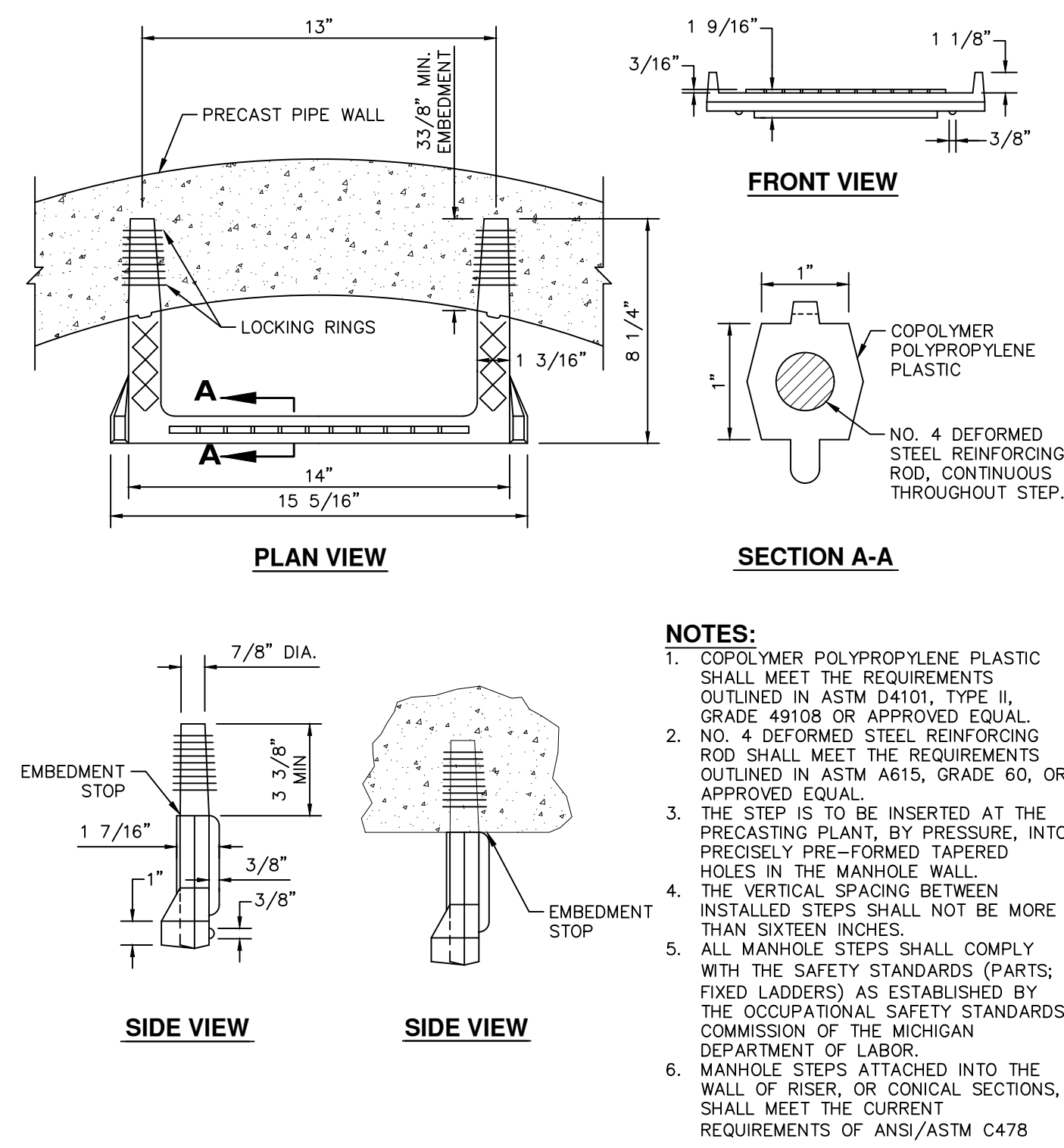
MANHOLE, PRECAST BOTTOMS & WATER CUSHION
NOT TO SCALE

DIAMETER INSIDE	WITHOUT BOOTS		GENERAL INFORMATION
	MAXIMUM PIPE SIZE FOR STRAIGHT THRU INSTALLATION	MAXIMUM PIPE SIZE FOR RIGHT ANGLE INSTALLATION	
48"	24"	18"	ALL DIMENSIONS ARE FOR CONCRETE PIPE
60"	36"	24"	ALL MANHOLES CONFORM TO ASTM C-478
72"	42"	36"	6" MINIMUM SPACING BETWEEN OPENINGS
84"	48"	36"	REFER TO MANHOLE SIZING CHART WITH FOR-N-SEAL CONNECTORS FOR DIAMETER OF MANHOLE REQUIRES WHEN USING BOOTS
96"	60"	42"	

MANHOLE SIZING CHART
NOT TO SCALE



MANHOLE, ASSEMBLY
NOT TO SCALE



MANHOLE, STEP FOR COPOLYMER POLYPROPYLENE PLASTIC
NOT TO SCALE

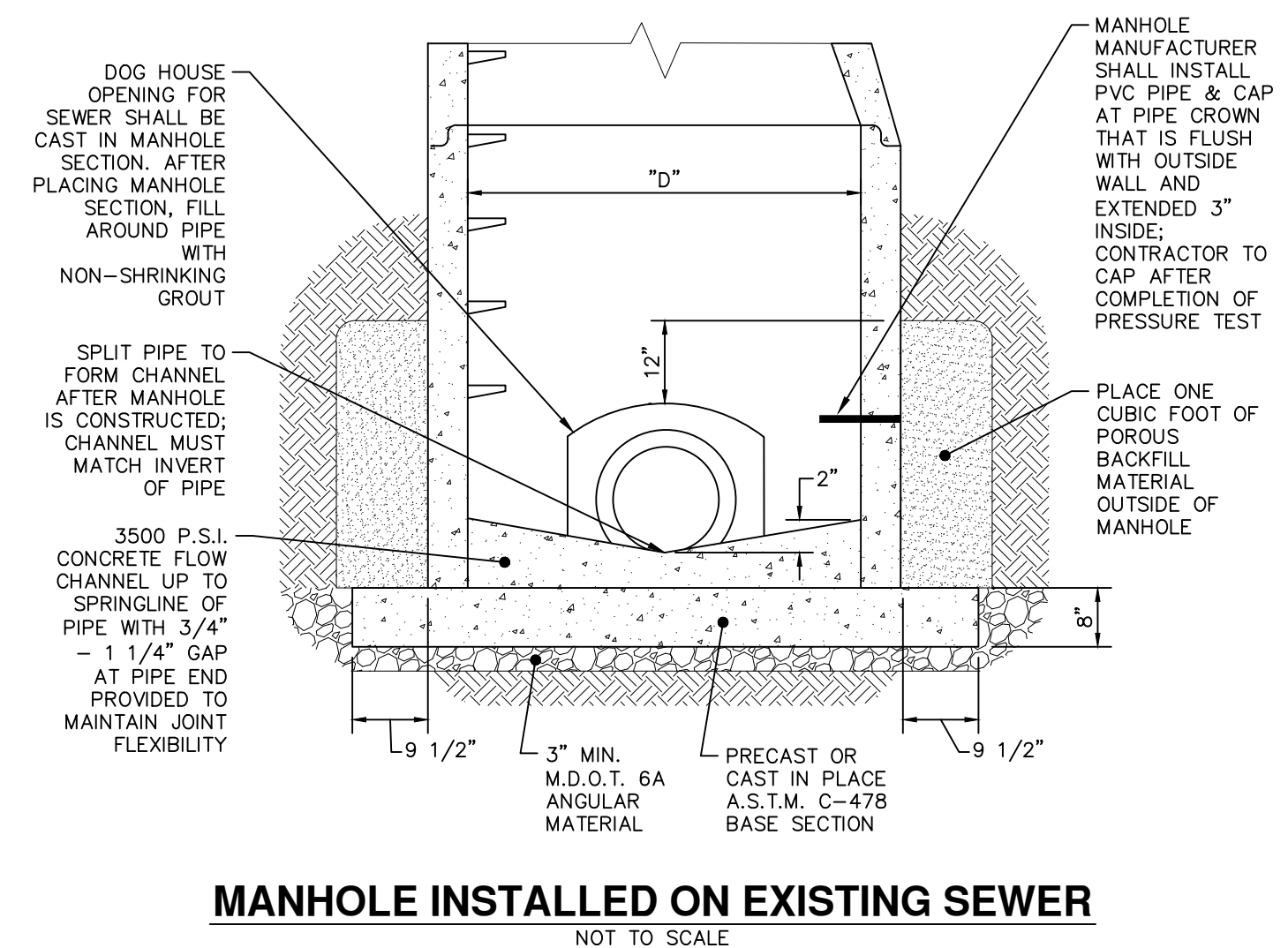
MANHOLES ASTM C-478										
WEIGHTS AND DIMENSIONS - US CUSTOMARY										
A RISER DIAMETER	IN	24	48	60	72	84	96	108	120	
B WALL THICKNESS	IN	3	5	6	7	8	9	9	10	
C OUTSIDE DIAMETER	IN	30	58	72	86	100	114	126	140	
D JOINT DEPTH	IN	2.75	2.75	4.75	5	5	5	5.25	7.5	
E BELL THICKNESS	IN	1.31	2.75	3.28	3.88	4.48	4.93	5	4.5	
F INTEGRAL BASE	IN	6	8	8	8	8	8	8	8	
G RISER HEIGHTS	FT	2	1.33	1.33	1.33	2.67	2.67	2.67	2.67	
H BASE HEIGHT	FT	3	2.67	2.67	2.67	2.67	2.67	2.67	2.67	
I CONE HEIGHT TO 24"	FT		2.5	3						
I CONE HEIGHT TO 48"	FT			2.67	2.67					
K LOOSE BASE - 6" THK.	IN	44								
K LOOSE BASE - 8" THK.	IN	48	72	84	96					
K LOOSE BASE - 12" THK.	IN			84	96	108	120			156
L STEP SPACING	IN		16	16	16	16	16	16	16	
M SPIGOT THICKNESS	IN	1.5	2.5	2.65	3.06	3.57	3.88	2.75	3.5	
N GASKET ANNULAR SPACE	IN	0.19	0.706	0.56	0.56	0.46	0.56	N/A	0.56	
O CONCRETE ANNULAR SPACE	IN	0.19	0.453	0.09	0.09	0.09	0.12	0.50	0.50	
APPROX. WEIGHT / FT.	LB	264	867	1295	1811	2409	3090	3400	4200	

NOTE: SOME DIMENSIONS MAY VARY BY MANUFACTURER. DESIGN ENGINEER SHALL ENSURE DETAIL MEETS AGENCY REQUIREMENTS.

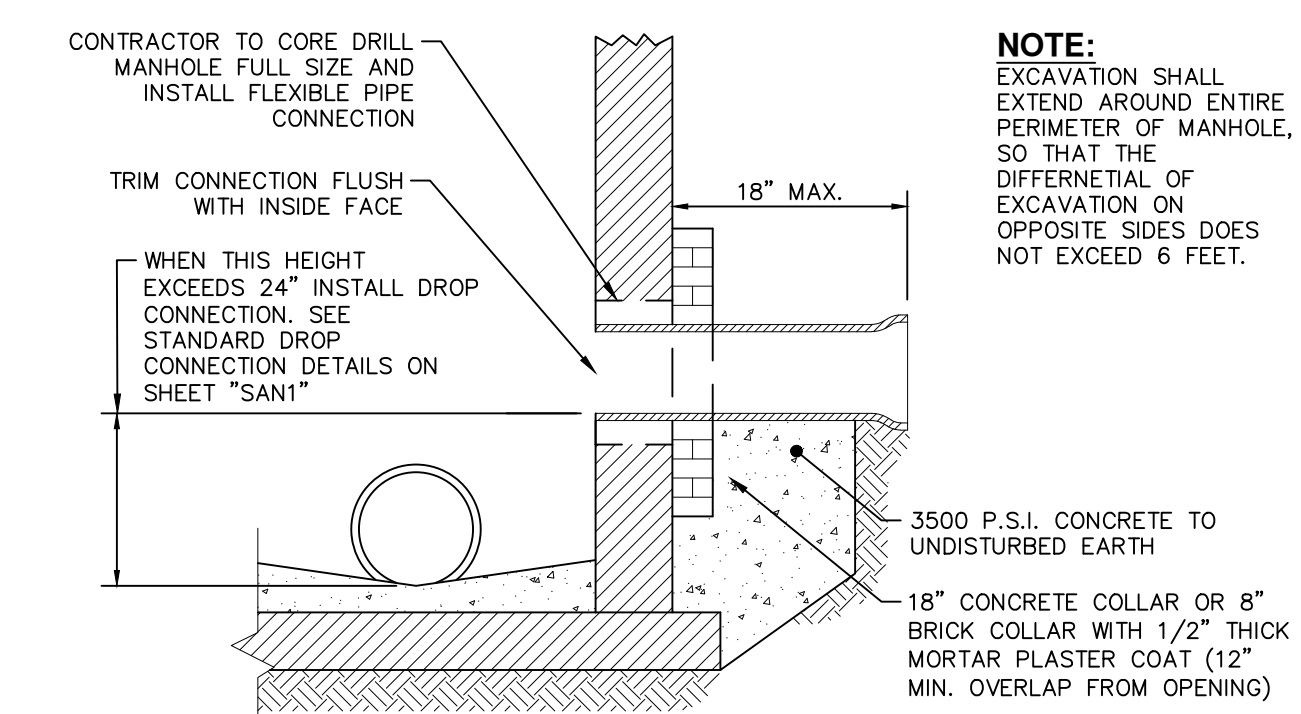
MANHOLE, ASSEMBLY SPECIFICATIONS
NOT TO SCALE

DOG HOUSE CUT OUT SIZES:

- 8" THROUGH 10": 17 1/2" MAX. CUT OUT SIZE
- 12" THROUGH 15": 20" MAX. CUT OUT SIZE
- "D" = 4'-0" DIA. FOR 8" TO 18" SEWER
- "D" = 5'-0" DIA. FOR 21" TO 42" SEWER

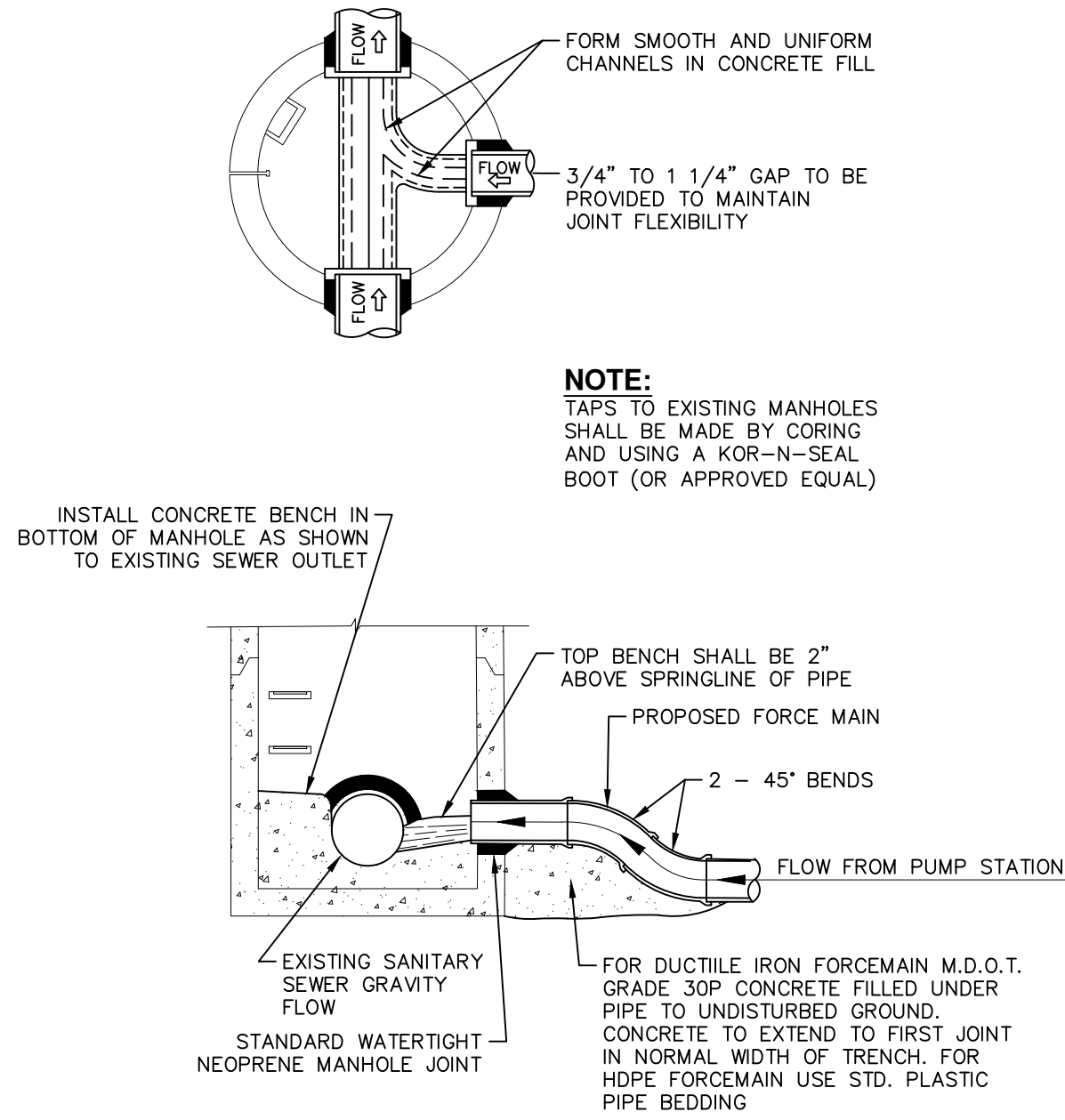


MANHOLE INSTALLED ON EXISTING SEWER
NOT TO SCALE

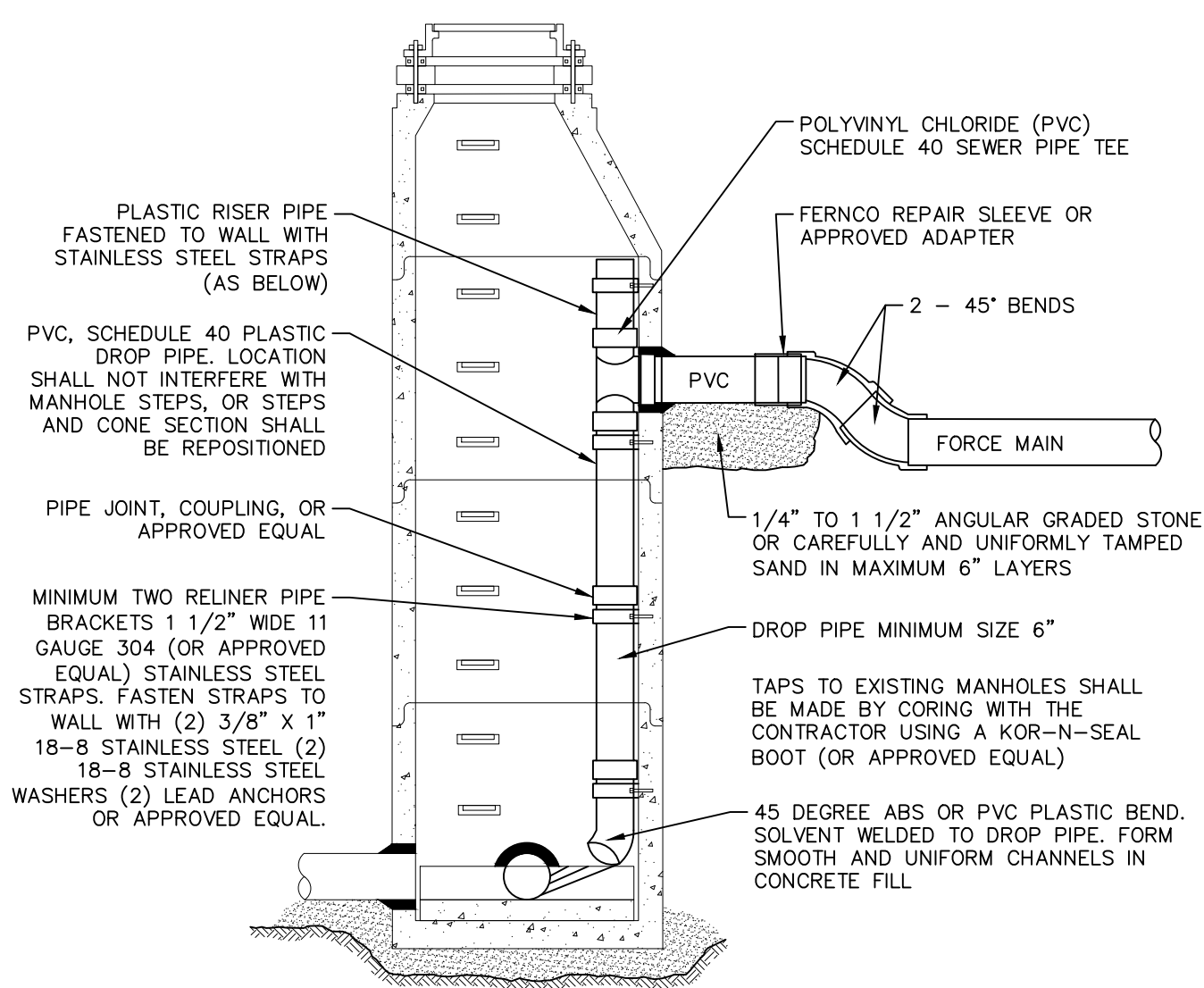


STANDARD CONNECTION TO EXISTING MANHOLE
NOT TO SCALE

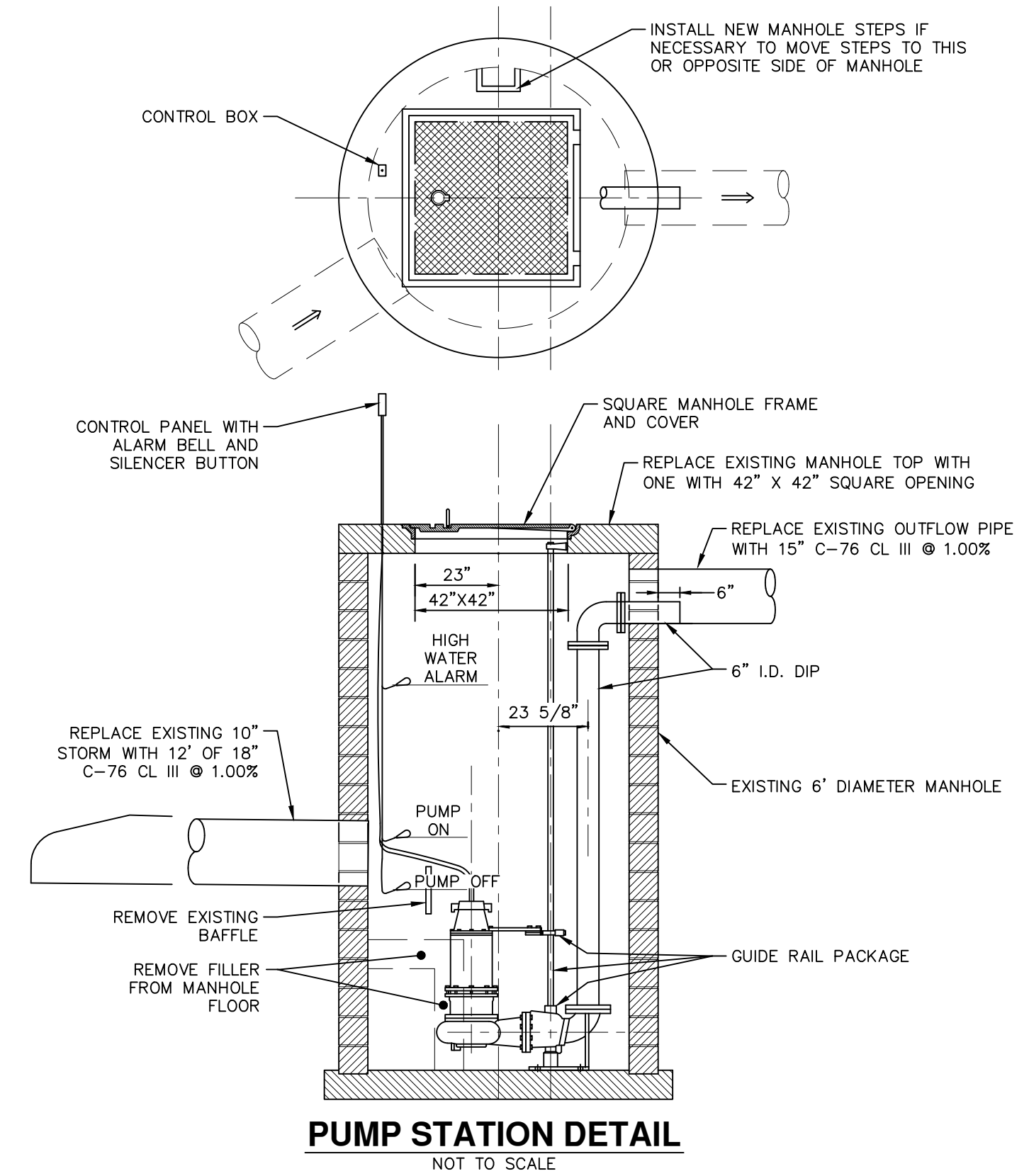




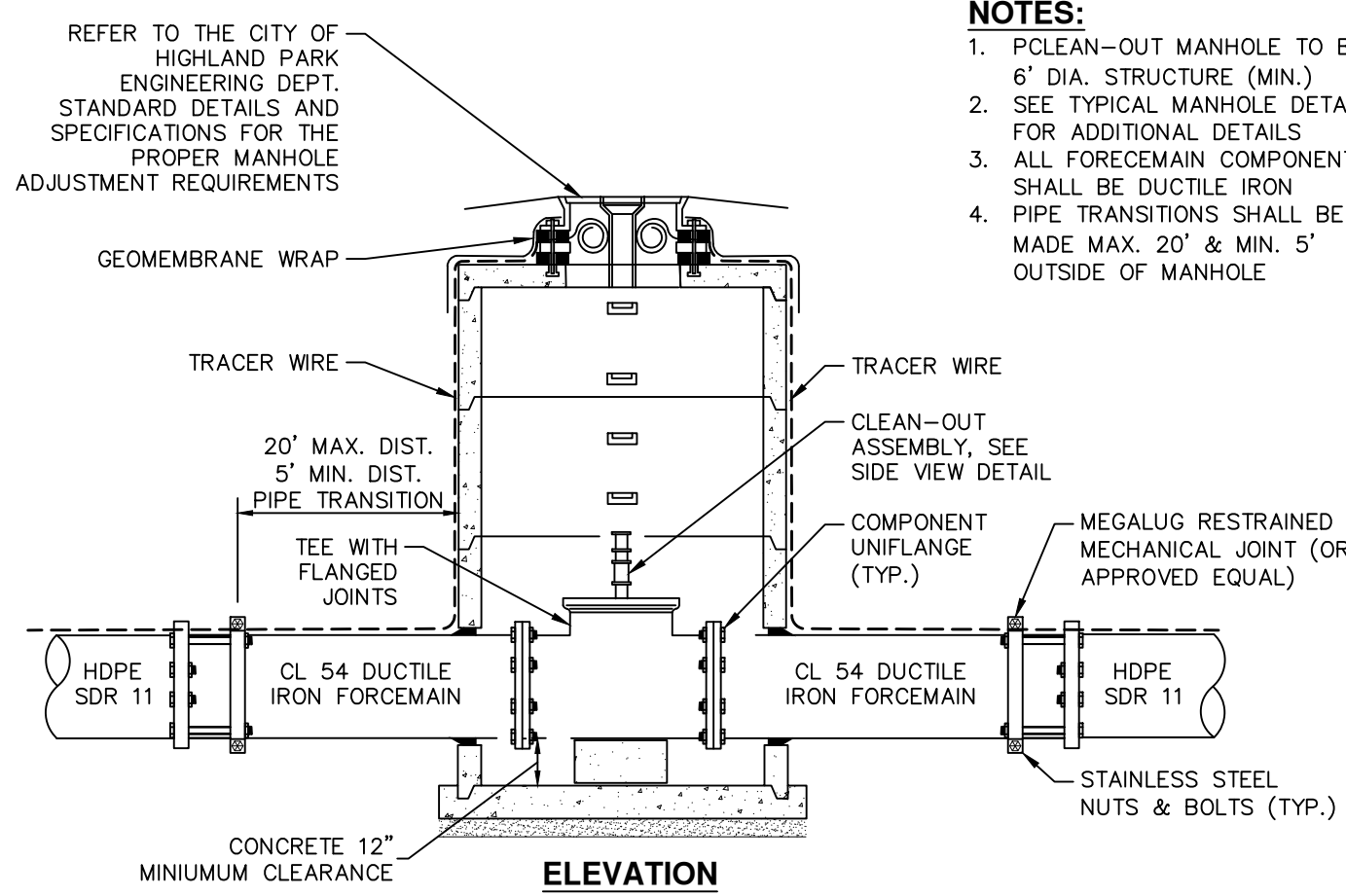
FORCEMAIN DISCHARGE TO GRAVITY SEWER MANHOLE
NOT TO SCALE



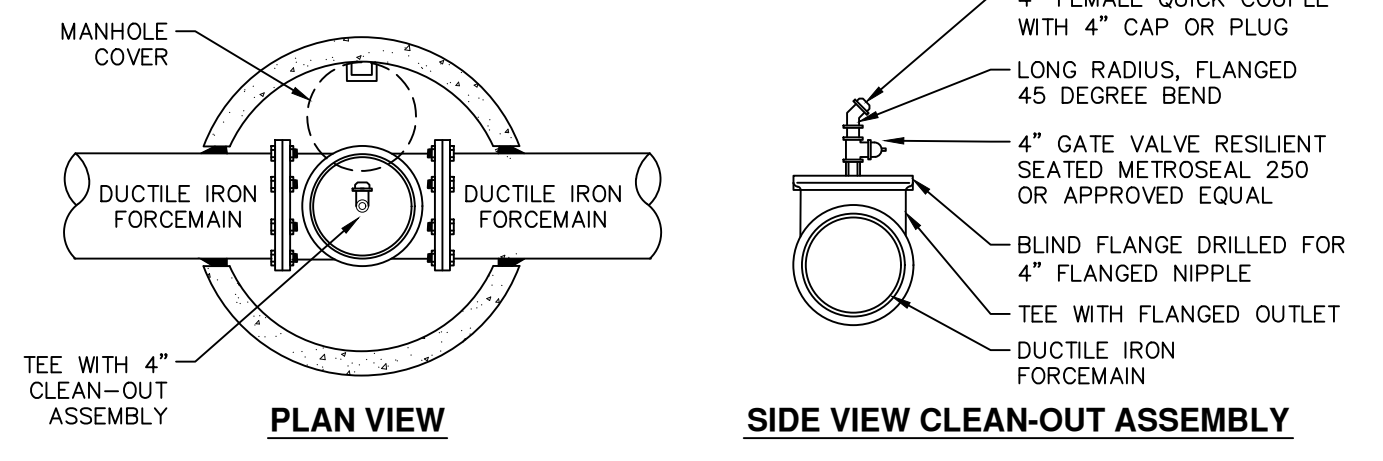
FORCEMAIN INTERIOR DROP CONNECTION
NOT TO SCALE



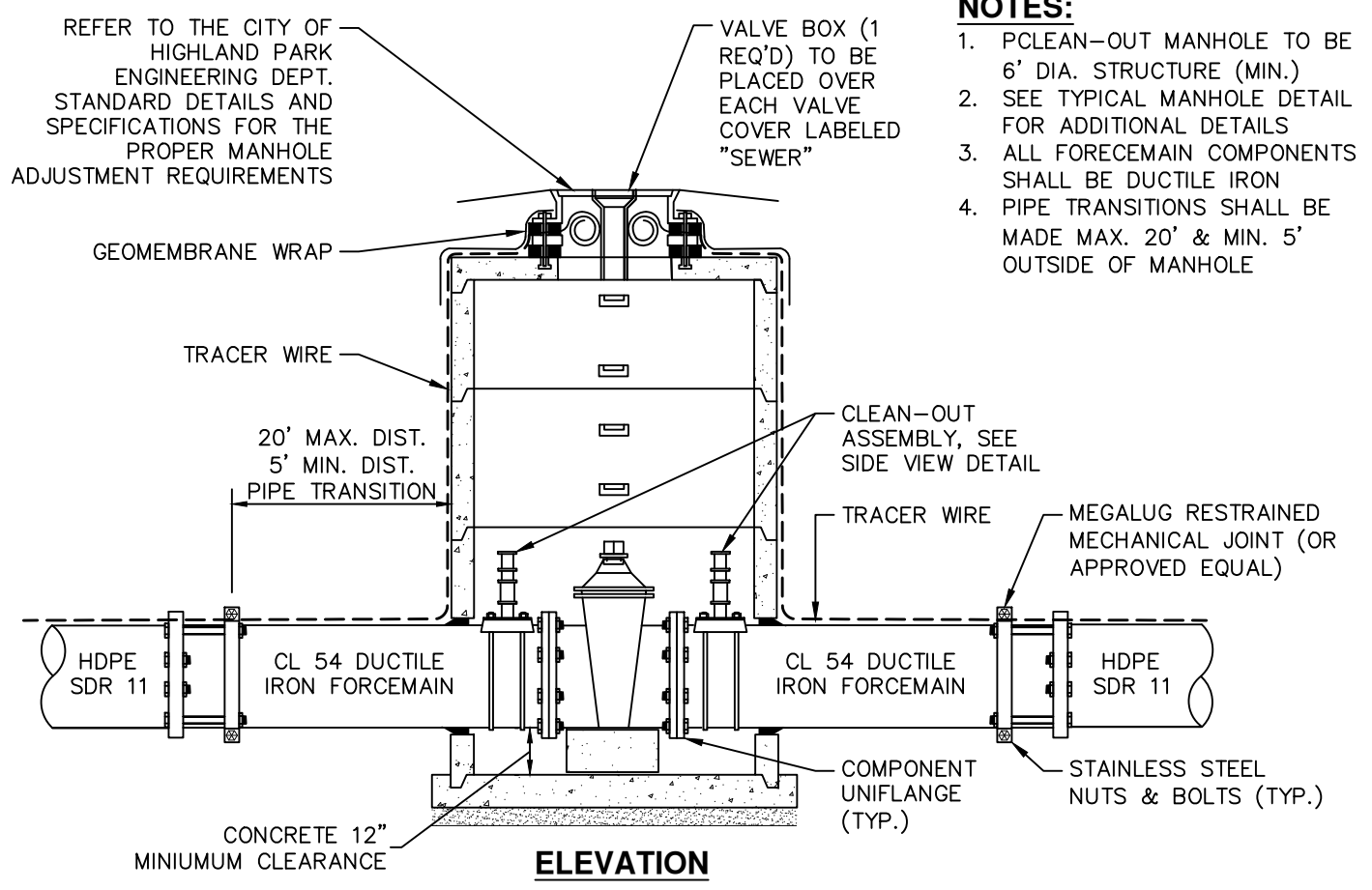
PUMP STATION DETAIL
NOT TO SCALE



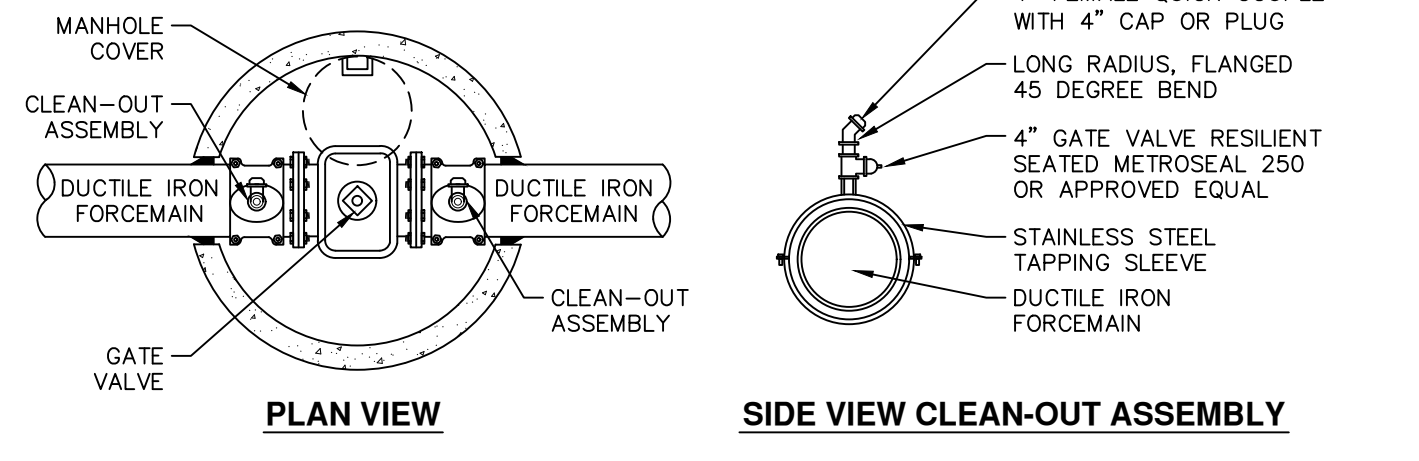
- NOTES:**
1. PCLEAN-OUT MANHOLE TO BE 6" DIA. STRUCTURE (MIN.)
 2. SEE TYPICAL MANHOLE DETAIL FOR ADDITIONAL DETAILS
 3. ALL FORCEMAIN COMPONENTS SHALL BE DUCTILE IRON
 4. PIPE TRANSITIONS SHALL BE MADE MAX. 20' & MIN. 5' OUTSIDE OF MANHOLE



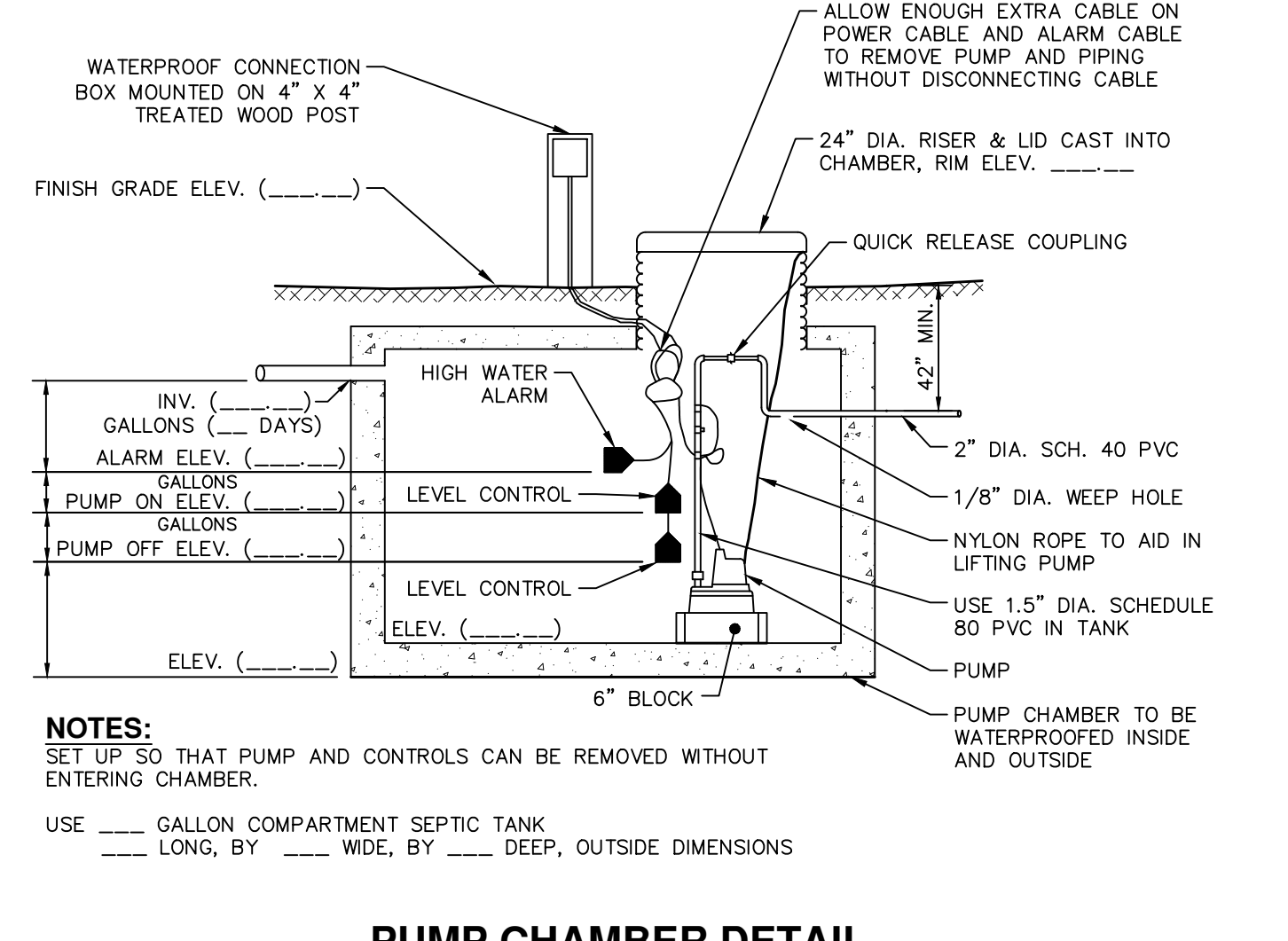
12 INCH AND LARGER FORCEMAIN CLEAN-OUT ASSEMBLY
NOT TO SCALE



- NOTES:**
1. PCLEAN-OUT MANHOLE TO BE 6" DIA. STRUCTURE (MIN.)
 2. SEE TYPICAL MANHOLE DETAIL FOR ADDITIONAL DETAILS
 3. ALL FORCEMAIN COMPONENTS SHALL BE DUCTILE IRON
 4. PIPE TRANSITIONS SHALL BE MADE MAX. 20' & MIN. 5' OUTSIDE OF MANHOLE

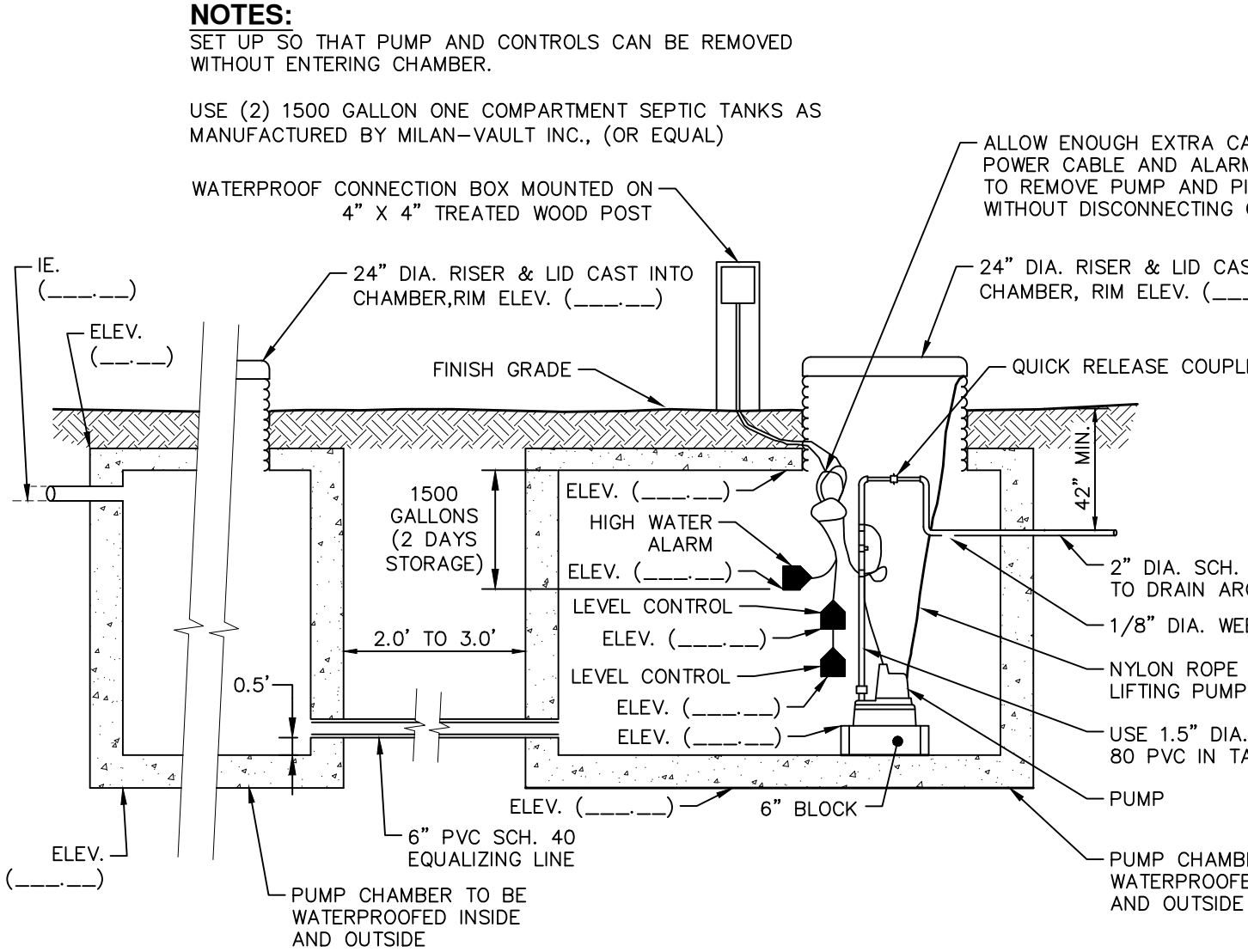


12 INCH AND LARGER FORCEMAIN FLUSHING ASSEMBLY
NOT TO SCALE



- NOTES:**
- SET UP SO THAT PUMP AND CONTROLS CAN BE REMOVED WITHOUT ENTERING CHAMBER.
- USE _____ GALLON COMPARTMENT SEPTIC TANK _____ LONG, BY _____ WIDE, BY _____ DEEP, OUTSIDE DIMENSIONS

PUMP CHAMBER DETAIL
NOT TO SCALE



PUMP CHAMBER - 2 TANK DETAIL
NOT TO SCALE

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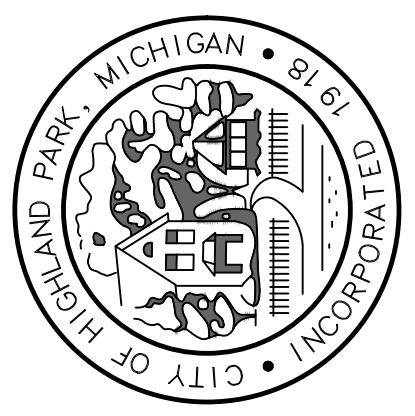


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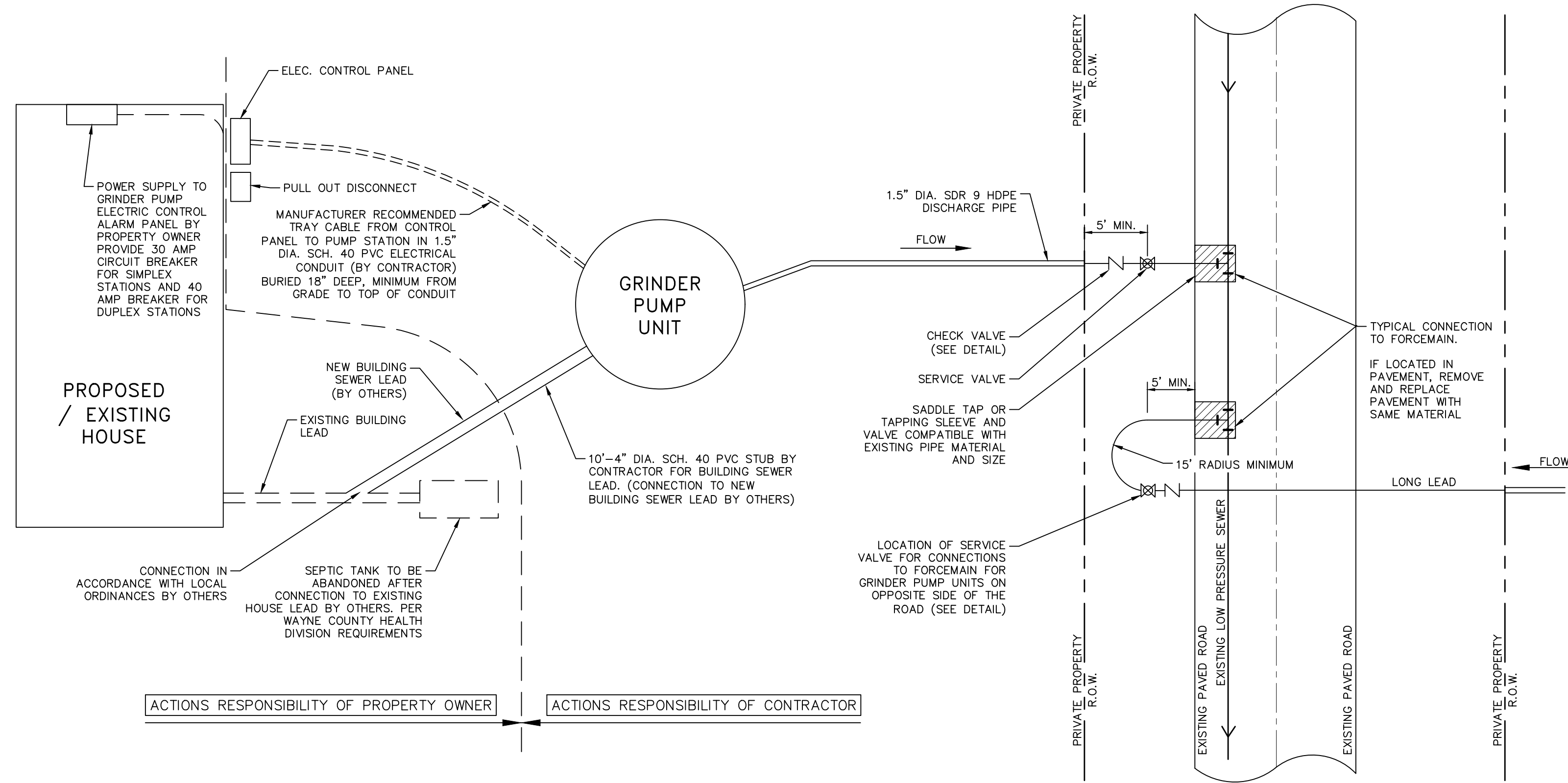
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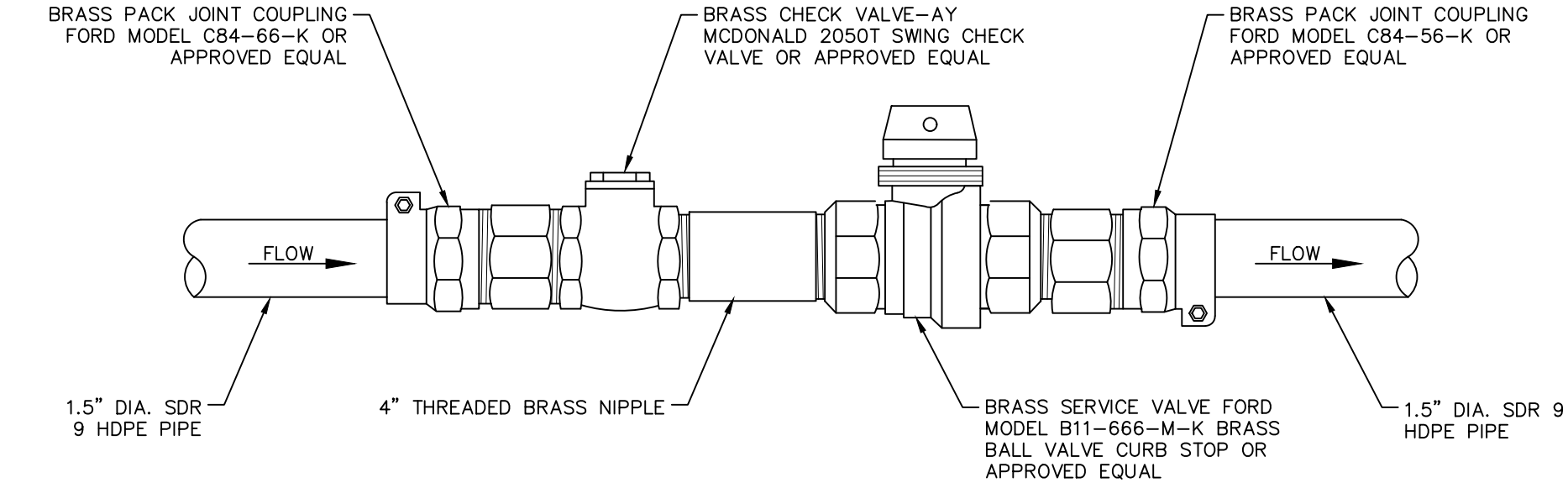
CITY OF HIGHLAND PARK
STANDARD SANITARY SEWER DETAILS AND NOTES
SANITARY SEWER-4



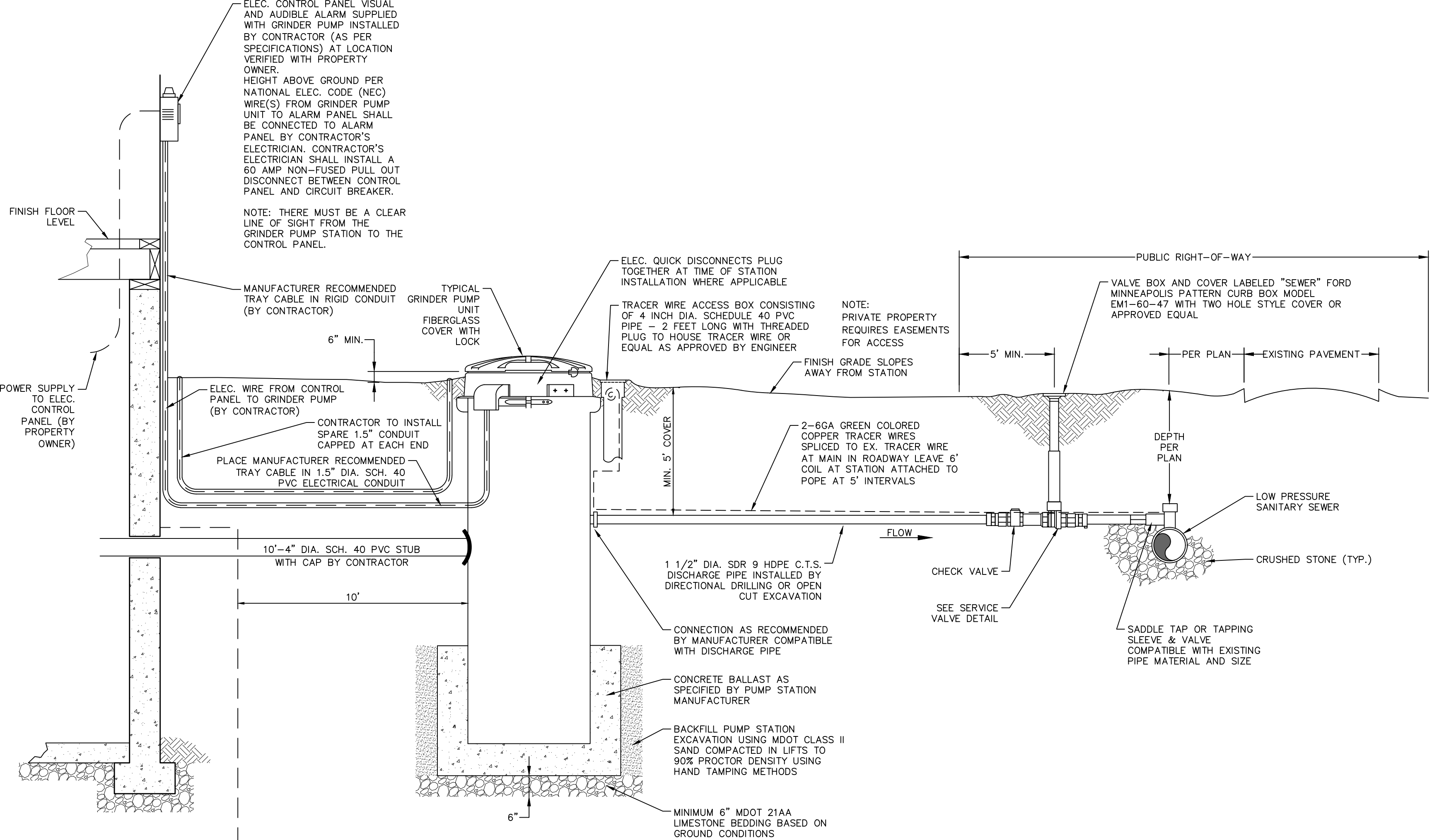
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SHEET:	SAN4



PLAN VIEW



SERVICE VALVE DETAIL

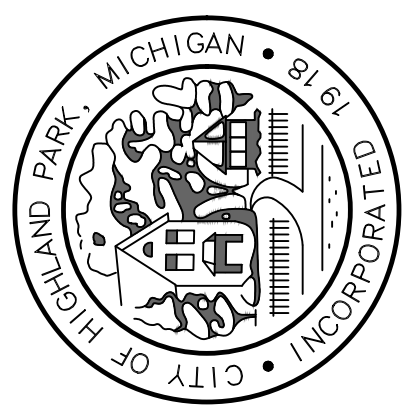


SECTION VIEW

TYP. HOME GRINDER PUMP SERVICE
NOT TO SCALE

ISSUED FOR:	
REV:	
DATE:	

CITY OF HIGHLAND PARK
STANDARD SANITARY SEWER DETAILS AND NOTES
 SANITARY SEWER-3



MCA JOB #:	1039-18-8756
DATE:	06.19.2023
SCALE:	AS SHOWN PER DETAIL
DRAWN BY:	Metro Consulting Associates
COUNTY:	WAYNE
SHEET:	SAN3

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